The Plough, the Loom, and the Anvil.

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THE ANTHRACITE COAL TRADE OF PENNSYLVANIA:

HOW IT AFFECTS THE FARMER AND THE PLANTER.

In 1820	there were	shipped	365 tons.	In 1841	there were	shipped	1,108,899 tons.
1825	—	—	34,893 "	1842	—	—	1,118,001 "
1829	—	—	112,083 "	1843	—	—	1,263,539 "
1834	—	—	383,547 "	1844	—	—	1,631,699 "
1837	—	—	881,026 "	1845	—	—	2,023,052 "
1838	—	—	739,293 "	1846	—	—	2,343,992 "
1839	—	—	819,327 "	1847	—	—	2,982,309 "
1840	—	—	865,414 "				

The chief object of this journal being that of promoting the interests of the planter and the farmer, we now submit the above statement of the growth of the anthracite coal trade of Pennsylvania, with a view to call the attention of both to the important influence it has already had upon those interests.

The price of a ton of coal at the place of shipment on the canal, or at the railroad depot, is about two dollars, of which one portion goes to the men who open the mines and prepare them for being worked: another to those engaged in the preparation of the machinery: a third to those who raise the the coal: and a fourth to the men and horses engaged in transporting it to the railroad, or canal, depot. The head operator has a small part, which invariably goes to the preparation of new machinery, and is thus divided amongst workmen. The land-owner takes a small part as rent, but the aggregate expenditures of the owners of land in the making of roads and other improvements are greater than their aggregate receipts—so that, taking the whole price of the coal, it may be assumed that *every dollar* received for it is paid out to miners, laborers, and other workmen employed in its production. If, now, we could trace the money that is thus paid out, we should find that nearly the whole of it goes to the farmer. The food of the workmen and their families absorbs a large portion of their earnings, and much of the balance goes towards the building of houses, by which is afforded to the farmer a market for the timber by which his best lands have been encumbered. He now sells, instead of destroying it. His wagon and horses, and his sons, are employed in hauling it to market, at intervals when they would otherwise be idle, whereby his land is cleared and he obtains the means of enclosing and improving it. Another part of their wages goes to paying for cloths and shoes, which represent little more than the wool, and the hides, and the food of the men employed in their conversion—and thus the farmer absorbs nearly the whole proceeds of the coal mine, which is a mere machine for the conversion of his products into a form to fit them for market.

By the time the coal reaches the place of consumption, the average price is about four dollars per ton. Two dollars are thus added, and a similar examination will show that of this nearly all goes to the farmer A part is for the tolls on canal or railroad, most of which is again expended in the payment for labor in repairing and extending those works, and that labor represents chiefly the food consumed by those who perform it. The horse that draws the boat, and the men who manage it, are large consumers of food.

The schooner by which it is transported again represents a vast amount of labor, and the wages of ship-builders and sailors go chiefly for food for themselves and families. The value of the three millions of tons of coal sent to market last year being taken at twelve millions of dollars, we may, we think, safely assume that ten of those millions went directly to the farmer in payment for food and other of his products. If so, it follows that the market *directly* afforded to the farmer by this trade, still in its infancy, in the last year, was equal, if not superior to the average exports of food to all the world, from 1840 to 1846.

This, however, is but the first and smallest of the effects upon the agricultural interest, produced by the existence of this trade, yet, as we have said, and as we beg the farmer to observe, in its infancy, and capable of being increased to an almost indefinite extent. We would ask him now to look to the numerous furnaces that have grown up since railroads and canals have rendered accessible the coal mines of Eastern Pennsylvania, and to recollect that every ton of iron that is produced, represents chiefly the food consumed by the men employed in its production. Let him then look to the numerous mills and factories that have grown up in towns and villages where no water power existed, and where, without this fuel, such action would have been impossible—to the thousands of steam-engines in Philadelphia, New York and Boston, engaged in the conversion of iron into other engines, of food and cotton into cloth, of food and rags into paper, and finally into newspapers, and thus facilitating the further application of labor to the conversion of his products into the various forms required to suit the tastes of those who desire to be consumers, and his customers—and above all let him look at the wonderful demand for sailing and steam-vessels, and particularly of the latter, since the employment of cheap fuel has enabled their owners to carry passengers at such low rates that everybody travels, and to transport grain and flour, and peaches and apples, at rates so moderate that the farmer obtains on his farm nearly the same price that is paid by the consumer in New York, Philadelphia, and other cities—and let him then determine if the *indirect* gain to him by the existence of this trade is not far more than that which he realizes from supplying food to the coal-miners, and laborers, and others directly engaged in the production of the coal itself, although that alone furnishes him a market for probably ten millions of his products. Having made this examination, let him determine for himself if he is not the chief gainer by the trade. He can scarcely fail to see that every ton of coal that is mined tends to increase the price of his great product, food, while increasing the facility of clearing and cultivating his better soils—nor can he fail to see that every ton that is consumed tends to diminish the labor required for producing spades and ploughs, and harrows, and clothing, and all other of the commodities required for his consumption, and that thus he gains on all hands by the creation of this great market for food.

Is this, however, all the farmer gains? It is not. Did not this coal trade exist, the men who are now producers of coal and consumers of food would be producers of food. Instead of customers, they would be rivals. The men who now work coal mines, and smelt iron ore, and convert pig metal into bars, and make steam-engines, and build steamboats, and get out stone and lumber for building factories, and those who run those engines, and man the steamboats, and work in the factories, would now, to the extent of probably a hundred thousand able-bodied men, be raising food in Ohio or Illinois, Iowa or Wisconsin, and thus the *diminution in the market* for the products of the farmer would be attended by an *increase in the supply* of those products and diminution in their value. It can scarcely be doubted that the production of coal, and the power which it has given for the advantageous

application of labor in a variety of ways, have made a market for far more than fifty millions of dollars' worth of food and lumber, and other agricultural products. Let, then, the farmer calculate what would be the effect of the closing of such an outlet for the commodities that he has to sell, and let him add thereto the further effect that would result from an increase of the supply by reason of the conversion of miners, and mechanics, and all the other persons who owe their employment to the existence of this trade, and then endeavor to estimate the advantage that he derives from it. Let him see if he would not have more transportation to perform, while wasting more manure, and getting smaller prices at the end of his journey.

Were it closed, there would be an instant deterioration in the value of his farm, and in the price of food, all of which, wheat, and rye, and corn, and pork, and bacon, and cheese, would then, assuredly, be cheap enough for export. If he doubt this, let him look to see which are the countries that *now supply cheap food*, and he will see that they are those which have made *no market on the land for the products of the land*—Poland, Eastern Germany, and Southern Russia. Let him then look to see what is the value of land in those countries, and he will find it almost valueless. Let him next look to see what is the value of labor in all those countries, and he will see that the laborer is little better than a slave. As travellers relate, you may see hundreds of white women in the fields, at work, without bonnet, shoe, or stocking.

Abolish coal mines, and iron furnaces, and close the factories now dependent upon coal for a supply of power, and the farmers of this country may at once become competitors with the poor people of Germany, and Poland, and Russia, for the ever-varying market of England, the securing of which is deemed by many of our politicians as the first and greatest object of all legislation. Abolish those markets for food, and we can have that one, so highly coveted, but the farmer will obtain less for his food, and he will waste on the road to distant markets the manure that now goes back upon his farm, and he will lose the market for his timber, and he will exhaust his poor soils in raising bushels of wheat, because unable to clear rich ones that would yield tons of potatoes, and then he will fly to other poor lands that are to be again exhausted.

But, it will be asked, why talk of abolishing the coal trade? It has grown up and established itself so fully that it cannot be abolished. *Nothing would be easier.* That trade is dependent for its prosperity upon the prosperity of the farmer and the planter. Let *them* reject the aid that is *even now afforded them* by the tariff of 1846, insufficient as it is, in the effort to seduce customers to come with their looms and their anvils to the side of the plough, and they will become poor, and scatter themselves over the west, and their demands for iron, and steam-engines, and clothing, will diminish, and the coal trade will languish, and the difficulty of maintaining the roads and canals by which the coal is transported to market will be increased, and if the trade do not absolutely die, it will linger on in a miserable existence. It grew under the tariff of 1828. In 1829, the quantity sent to market was 112,000 tons. In 1837, it had risen to 881,000 tons, and farmers, and manufacturers, and coal-miners were prosperous. The rapid reduction of the tariff after that period ruined the manufacturers and depressed the farmers, and in 1842, six years afterwards, notwithstanding the application of coal to steam-boats, the quantity sent to market was but 1,018,000 tons.

With the passage of the tariff of 1842 the demand began to rise, and with each year from that period to 1847, there was an improvement in the prospects of the farmers, the manufacturers, and the miners, who, in that year, sent to market nearly three millions of tons. The tariff of 1846 has now become

fairly operative, and furnaces have ceased to be built, while factories are being closed. Coal is a drug in the market, and so are likely to be wheat, and corn, and oats, and hay, and potatoes. The potatoes, and corn, and hay, are commodities of which the earth yields largely, and, therefore, they will not bear transportation. If the market on the ground be lost, the farmer must cease to raise them, and such must be the result, if he will insist upon driving those who are now consumers of food to the west, there to become producers of food. Let him do this, and he will exhaust his land, and then run away himself.

The planter will, however, say, that how true soever this may be, as regards the farmer of Pennsylvania, he himself can have no interest in the coal trade—that he sells no food to miners, or to furnace men, or to builders of steam-engines, and that it is all the same to him whether they use anthracite or Liverpool coal, and that his cotton will sell for as much in the one case as in the other. How far this is true, we may now inquire.

The world is divided into producers of agricultural products and consumers of them. The larger the proportion which the consumers bear to the producers, the higher will be the prices of his products, and the more profitable will be the labor of the farmer, and the more valuable will be his land.

The planter is a producer of food and cotton. If the price of food be low, the larger will be the proportion of his force that he must apply to the production of cotton, and the smaller will be his production of food. If food be high, he will raise more of it and less of cotton.

The larger the proportion of his force that is applied to the production of cotton, the greater will be the demand for ships, the higher will be freights the larger will be the quantity of cotton in market, and the lower will be its price. The less he is compelled to devote himself to cotton, the lower will be freights and the higher will be prices.

The diversion of labor from the production of food to that of cotton, to the extent of 100,000 bales, will, at a very moderate calculation, lower the price of the whole crop one cent per pound, which, upon the present crop, is equal to 10,000,000 of dollars. The diversion of labor from cotton to food to the extent of producing a reduction of the crop, 100,000 bales, will raise the whole crop to a similar extent, and the gain to the planters will be 10,000,000 of dollars, in addition to the further gain from the increased price of the food they have to sell.

These propositions being admitted, as we think they must be, we may now inquire into the effect of the coal trade on the planter's interest.

That trade even now affords, *directly or indirectly*, a market for more food than we have ever exported—more even than we exported last year, to all parts of the world. In addition to this, it affords a market for labor, which, if applied to the production of food, would add immensely to our present large product. The surplus for which markets would be needed in case of the abolition of the coal trade, would be more than three times as great as it is even at present, and the direct effect of such a measure would be an enormous fall in the price of food, the production of which would cease to remunerate the planter, who would then raise less food and more cotton. Large crops would make high freights, while prices abroad would be low, and the planter would be ruined.

If such would be the effect of a total abolition of it, it must be obvious that every reduction of it, however small, tends, in the same direction, to reduce the value of southern property, and to reduce the power of the planter to improve his condition and that of the people whom he employs; while every increase, large or small, tends in the opposite direction: that is, to add to the value of southern property, and to increase the power of the planter to

improve his own condition and that of his people. Such being the case—and that it is so we entertain no doubt—it is obvious that the planter is directly interested in every measure that tends to place the consumer by the side of the producer, whether at the mines of Pennsylvania, or in the factories of Massachusetts or Rhode Island, because every such measure tends to diminish the necessity for emigration to Iowa or Wisconsin, there to become producers of food. *Every man is either a customer to the farmer or a rival to him.* Hundreds of thousands who are now rivals, and whose competition is now keeping down the prices of food and cotton, would have remained at home to become customers, had the farmers and planters of the country understood that protection to the loom and the anvil was, in fact and in truth, protection to the plough.

Throughout the whole Union, properly considered, there is no real difference of interests. Every measure that tends to increase the number of consumers in Massachusetts and Pennsylvania, tends to diminish the necessity for over-stocking the markets of the world with cotton and tobacco; and every measure that diminishes the consumers in those States, tends to render necessary the application of more force to the production of those staples, with diminished returns.

By politicians—the class of men who live by the labor of others, and are paid, either directly or indirectly, out of the taxes they impose—the people of this great Union are divided into northern and southern, eastern and western, all with opposing interests, but the only true division is into that of producers of food and cotton, and consumers of food and cotton. The one has corn and cotton to sell, while the other has labor to sell, and corn and cotton to buy. The more buyers of corn and cotton, the greater will be the demand, and the higher will be the prices. The more sellers, the less will be the demand, and the lower will be the prices. The nearer the loom and the anvil can be brought to the plough, the more numerous will be the buyers, and the larger will be the quantity of cloth or iron obtained in exchange for a given quantity of labor. The more distant they are, the less will be the value of labor estimated in cloth or iron. The nearer they are, the less will be the loss of manure, the better will be the soil cultivated, the more valuable will be the timber, the larger will be the crops, the more regular will be the demand for labor, the more industrious will be the laborer, the more valuable will be his time to himself and to his employer, and the greater will be the power of union for the purpose of building houses, mills, or railroads. The more distant they are, the greater will be the waste of manure, the poorer will be the soil that can be cultivated, the less valuable will be the timber, the smaller will be the crops, the more unsteady will be the demand for labor, the more difficult will it be to obtain labor in harvest, the less valuable will be the time of the laborer, either to himself or to his employer, the less will be the power of union for any purpose of improvement, and the greater will be the tendency to fly from each other. Population makes the food come from the rich soils, and facilitates the further growth of population because of the increased facility of procuring food. Depopulation compels men to abandon rich soils, and fly to poor ones, because of the increased difficulty of obtaining food. Between the planter and the farmer, the manufacturer and the coal-miner, then, there is no opposition of interest. The owner of the plough, whether planter or farmer, is, on the contrary, above all, interested in the measures necessary for bringing the loom and the anvil to his side.

"Man *must* everywhere commence with the poor soils, and the richer ones *cannot* be cultivated until the consumer and producer are brought together. Whatever foreign interference tends to prevent this union, tends

to compel men to scatter themselves over poor soils, to prevent increase in the reward to labor, and to prevent advance in civilization: and resistance to such interference is a necessary act of self-defence. The article of chief consumption is food, of which rich soils would yield *larger* quantities in return to *half the labor* required on the poor ones; and half the difference would convert into cloth all the cotton and wool produced, and make the iron used, in the Union. Such being the case, the exports required to pay for English labor are so much absolute loss, while the great machine itself suffers in the loss of labor that would double it in product and in value."

Under the influence of political causes so obvious, must it not be apparent to every farmer of Maryland and Virginia, and every planter of the Carolinas and Georgia, that they and their children are directly concerned in, and that they ought to keep vigilant watch over, the legislation of State and Federal Governments, to see that no obstacles are created, or allowed to exist, which stand in the way of such associations of capital and means as will promote the growth in our own country of healthful and useful industry, in every department of human employment? And would it not much better comport with the true objects and duties of agricultural societies to promote the investigation and establishment of truth, in reference to questions of such vital importance, than to waste their time in the repetition of mere expedients which have been practised again and again for the last fifty years? Some farmers, high in public estimation, and as high in individual merit, are heard to say—"These are matters we must leave to others to discuss!"—but what said Hercules, when called on by the wagoner? First put thine own shoulder to the wheel. All the world over it is true—that if you want a thing done, leave it to others—if you want it *well done*, look *to it yourself.*

NINETY TONS,

NOT QUARTS, NOR BUSHELS, BUT NINETY TONS, OF MILK AND STRAWBERRIES TRANSPORTED IN A SINGLE DAY, ON THE ERIE RAILROAD, INTO THE CITY OF NEW YORK.

With the contemplative farmer, whose interest and inclination alike should prompt him to investigate the true foundations of prosperous agriculture, what a train of reflection must follow the perusal of the above statement, which occurs in a country newspaper, while he who looks habitually at the surface of things, reads it with momentary admiration, and without ever dreaming that in this fact, more than in the force of a thousand isolated premiums, is to be discovered "*how to make poor land rich!*" and then what a volume of testimony does it present to the reflective mind, on the influence of the more perfect systems of internal improvement in meliorating the practice of agriculture, and all the pursuits of civilized life! Ninety *tons* of strawberries and milk, which go so well together everywhere, passing in one day over one out of a thousand channels leading to a single city, peopled by half a million of men, women and children, laboring and prospering, in the various arts and manufactures, trades and professions, that make up the business of a great community—carpenters, bricklayers, tailors, shoemakers, livery-stable keepers, printers, bookbinders, lawyers, doctors, women at the loom, and men at the anvil, none of *them* rival producers of the farmer, but all of them daily consumers of the products of the plough and the spade! and yet there are demagogues of narrow minds who would persuade the cultivator of the soil to regard with envious distrust the followers of every industrial

calling but his own; and to look on the well-doing of all other classes as detracting from his own! Be it, then, our duty as unaffected, we might almost say sworn friends of the plough, to persuade him who follows it to consider the numbers, the prosperity, and even the wealth of all other classes as the best possible guarantee for his own; as it is his most reliable, nay, his only security for a uniform compensating demand, not merely for a few of the principal staples of agriculture, such as corn and wheat, and cattle and hogs, and cotton and rice and sugar; but for commodities the most bulky and the most delicate and perishable—even milk and strawberries as we here see by the ton, and such as the most perfect and remunerating husbandry only can produce; and such moreover as will never pay, and, therefore, never be produced by those who live at a great distance from the consumer, and who has to travel that distance over bad roads to fluctuating and uncertain markets. Had it been the policy of Virginia to favor a system of domestic and of national legislation, that should force the foreign capitalist to come with his money and his machinery, to use her own water-power and her own coal-mines and ore beds, and to weave her own wool, then, too, might Virginians, weeks in advance of the people on the Hudson, be sending their *tons* of milk and strawberries to market. But, instead of that, what is the melancholy fact? Look here, at a paragraph we find in the Colonial Herald:

Depopulation of Virginia.—The Petersburg Gazette informs us that upwards of seventy emigrants, a few days ago, passed through that town, from the Valley of Virginia, on their way, with a large number of slaves to Missouri, and the remainder to Iowa. Thus, says the Gazette, is Virginia peopling other states, when she ought to hold her own and attract immigration from abroad.

It is a singular fact, that while the tide of population is rushing westward like a torrent, there is an immense portion of the country, lying along and near to the Atlantic, that is a waste. In Virginia and North Carolina, and South Carolina, tens of thousands of acres remain untouched, and in Virginia especially, the annual increase of population is so very trifling that in comparison with many other states, it is absolutely retrograding. In the heart of Pennsylvania and New York, there are thousands of acres of land which have never been settled, and it is strange that while crowds are turning their steps to the far west, even to the distant Oregon and California, there should be a want of improvement in those places which are near the greatest civilization, and quite as naturally capable of being made productive as any lands in the west.

While we cannot people such states as Virginia and North Carolina, and while the rich lands of Pennsylvania and New York remain in any degree untouched, it seems the acme of folly to be seeking after new territory.

To a great extent, the same observations might be applied to Pennsylvania, where the study of her wiseacres, representing her *landed interest*, has been and is, not how to attract wealth—not how to increase and concentrate population by natural increase, and by holding out rewards to the immigrant to settle with his little capital, and his skill and labor, within her borders, but how she shall disgust and repel capital and immigrants by rendering the union of capital as difficult and perilous as possible!!

In these ninety tons of milk and strawberries, we see the undeniable benefit of concentration instead of dispersion—and hence the wisdom of a settled, all-pervading national policy, which would so increase the number of artisans in our own country, that they would reward the farmer for making tons of milk and strawberries in lieu of bushels of corn and oats.

Such a policy would encourage the capitalists of Europe—of France, of Germany, and of England, to break up their establishments there, and come with their lighter machinery for fashioning the products of the earth, to settle down near the great machine of production,—the earth itself, on which the food is produced. By such a policy, better than all the premiums that society can offer, we should make it the interest of the ironmonger and

coal-heaver to come and delve and dig in our own mines. Thus we should draw the weaver with his loom, and the smith with his anvil, to come as they are seen on the cover of this journal—to come and settle as nearly as possible to the plough; and that not alone for the benefit of the weaver and the smith, but yet more for that of the ploughman himself—so true is it, that their interests are reciprocal and harmonious, when left to follow the laws of nature. Nature, common sense, common interest, instinct, would draw men together for safety, for social improvement, for social enjoyment. Nothing but the cunning and fraudulent devices of the politician sunders and separates them. Can any thing be plainer than that when the customers of the landholder are at a distance, in proportion to that distance he can afford to go to them with few things?—for if they consist of the bulky commodities of horticulture, which are most profitable, they will not pay for transportation; and if lighter and more delicate, they must perish on their way to market. On the contrary, when he instructs his representatives to establish a system of uniform encouragement to American industry, he draws his customers nearer to his plough, and when he has done that, the greater the number and variety of articles will their demands draw out of the soil, for their strawberries and milk will go along with the corn and the flour, and yet the greater will be the time at the command of the cultivator of the soil to manure and augment the power of the soil, and to that increase in the power of the soil, and of the owner of the soil, will follow every imaginable beneficent consequence that can contribute to the civilization and happiness of the human race.

See below the picture of these beneficent consequences, as described by Mr. Carey, in his *Past, Present, and Future*, a work to which we cannot too often refer the farmer in search of the true and only secret for insuring solid, wide-spread, enduring improvement for American agriculture! As for accomplishing such general and continued advancement of agricultural science, or increase of agricultural improvement and prosperity, by a system of premiums, it is as idle as it would be in Col. Hampton in a dry time to go over his 1500 acres of cotton with a common watering-pot. If you would test the capacity of the soil, and keep that capacity fully to its power of production, you must ensure a *remunerating demand for its produce.* It is not a premium of $50 or $500 or $5000 for a crop of one hundred bushels of corn to the acre, to be given by subscription to one corn-planter out of a million, that will ensure fifty bushels of corn to the acre, through a state or a county; but raise up mouths enough to be fed—and let the feeders be close at hand and prosperous, and then you will get, not fifty bushels of corn, but even strawberries at the rate of $600 to the acre, as they have been produced in old sterile New England—where population brings the food by tons out of the ground, naturally covered with stone, at the rate of a ton to six feet square, as at Mr. Phinney's:—

If now we enter the home of one of these happy farmers, we find him also turning his eyes inward. His wife, his children, his farm, his cattle, and his house, stand first in his thoughts. In these it is that he finds his happiness. We should, however, greatly err if we supposed the man whose thoughts are thus concentrated upon his home to be incapable of associating with his fellow men, or to be in any degree incapacitated for so doing. On the contrary, it is because of his combination with them that he is enabled to exercise the power of concentration. The miller is near him, and he is not obliged to travel abroad with his grain when he desires to have it converted into flour. His near neighbors are the tanner, the shoemaker, the hatter and the butcher, and he is in the habit of daily intercourse with them. He discusses with them and with others of his fellow-citizens, the laying out of roads: the arrangements of the little and growing town: the building of churches; the institution of schools and little libraries for his children, and the formation of a library for their own joint use: and he combines with them in all the arrangements for the maintenance of perfect security of person and property; for the set-

tlement of differences that may arise among their fellow-citizens; for the collection of the contributions required for the making of roads and for other purposes; and for a vast variety of other matters interesting to the community at large. Combination tends to promote security and the growth of wealth, and wealth enables him daily more and more to concentrate his thoughts upon his home, and its occupants: and this concentration, in its turn, promotes the growth of wealth, by enabling him daily more and more to reflect upon the measures necessary to the advancement of the common good: to devote his leisure in aid of those less fortunate than himself: to acquire knowledge by the study of nature, or of books: and thus still further to advance the interests of the society of which he has the happiness to be a member. The labors incident to the performance of the general business of the society are light, for they are divided among all; and they cost little, for they are performed by the men who have themselves to contribute towards its payment. All work and all pay, and hence the work and the pay fall lightly upon each.

What are the common observations of every southern man, as, for the first time, he travels over the delightful roads of New England. Let us recount them as they struck us on a first view of the country, a quarter of a century ago, when we remember with pleasure to have been introduced on the same day, by the venerable Josiah Quincy, to two remarkable characters, (with no irreverence to the first of them be it stated,) the then aged and honorable JOHN ADAMS, and the famous *Oak's cow!* whose portrait and lactiferous out-pourings we gave in the American Farmer, which we had then not long established, in a determination that as long as we could raise the means, agriculture should not decline for want of at least one advocate.

THE SEVEN WONDERS OF NEW ENGLAND,

IN THE EYES OF A SOUTHERN TRAVELLER.

1. EVERY man living in a "bran spanding" new house, or one that *looks* as if it had been painted as white as snow within the past week!

2. All the houses of wood, where all the fences are of stone, which in some places lie so thick as to require to be removed at the rate of a ton from six feet square.

3. Wood for house and kitchen all *sawed* and split up into one uniform length and size, and snugly piled away under cover of an open shed, so that the work of house and kitchen may suffer the least possible interruption—in a word, he sees a place for every thing, and every thing in its place.

4. The care obviously bestowed in the saving and preparation of manure by accumulation and composting.

5. Universal attention to a good supply of fruit, adapted to the climate.

6. Not a poor or superfluous ox, cow, horse, hog, or sheep, the proportion of the short-lived, expensive horse, being on every farm wisely and economically small!

7. The seventh wonder is, after a day's ride, (twenty-five years ago, with great uniformity in their stages at the rate of 7½ miles an hour, now on railroads at the rate of thirty,) where, in the name of all that is mysterious and inexplicable, are these people's staple crops? What do they make for sale? Where are their stack-yards of wheat, straw, and fodder, and oats, and rye? Where their tobacco-houses, and their gin-houses, their great herds of cattle and swine, rooting in the swamps, browsing in the fields, or reposing in the shade? How is it that these people contrive to keep out of debt, and yet never repudiate? How do they go on improving their rocky land, carrying tons of *stun* from the hills above to under-drain the meadows below? building school-houses in sight of each other, and expending millions on education, while buying for themselves, one a little bank stock, another a

little railroad stock, and a little stock in a neighboring factory, at which he sells his milk and his apples, his carrots and potatoes, once in a while giving $100 an acre for a small farm in his neighborhood? Dear reader, to explain all these wonders of New England thrift and go-aheadtiveness in full would make a long story, but if you will turn back to the first page of the cover of this journal, you will see at once *the key to the riddle!* There you see the secret by which alone poor land throughout a country can be prudently and economically made rich—for there you see THE PLOUGH, THE LOOM, AND THE ANVIL, all close to each other, the first being the most prominent.

It is there, and there only, where the cultivators of the soil have the wisdom to encourage all other branches of *American industry*, that you will ever see or hear of *ninety tons* of milk and strawberries going by one road, in a single day, to be consumed before the milk can sour, and before the strawberries can sour, by weavers, and blacksmiths, and shoemakers, and tailors, and churchmen, and laymen, and printers, and printers' devils; and what is more, some of these perishable articles going in one night probably at least 100 miles, to be eaten fresh the next morning for breakfast! So much for easy and expeditious channels of communication that concentration lays over the ground, to provide for the transportation of the food that concentration only can bring out of the ground.

It is in *this* that we find the secret for "*making poor land rich.*" It is not all the premiums that can be offered, nor prize essays, though they be spun out as long as the main-top bowline, that can convert a poor exhausted country into a rich one, and cause a flourishing agriculture and a dense population to take the place of barrenness and dispersion. With good seed, good implements, abundant capital to buy manure, or time and skill to accumulate it, all accompanied with good tillage and good seasons, any one may make poor land productive; but that is not the knowledge that is needed—we have had that illustrated in practice, and told on paper in a thousand instances. Neither do we want militia musterings, nor martial music, nor raree-shows of any sort, to attract gaping crowds of thoughtless spectators. What the agriculture of old states needs, with their thousands of undrained and uncultivated land, or lands exhausted of their fertility and stationary in population, is, not the knowledge of how to make, but where he can find a market for what he could make, if there were people near, with money in their pockets and mouths to be fed.

Where is the farm, in Maryland or Virginia, that might not produce its bushels of strawberries, and tons of butter and cheese, and beets, and carrots, and potatoes, and cabbages, if there, as in New England, the plough, the loom, and the anvil, the tanner, the shoemaker, and the butcher, were all at work in the sight and sound of each other? Nor does any thing conduce so much to general happiness as steady and habitual labor—where labor is sure of its reward. All these results we should have throughout the country, if we could have uniform, permanent, and just encouragement of *American* labor, as the fruit of a general national conviction that American labor has a right to be protected against the over-tasked and under-paid, and badly-fed labor of Europe; and this is eminently due to the farmer, for it is he who wants prosperous, well-paid, laborious consumers, close at hand, tempting him and rewarding him for bringing the food out of his richest lands. It is the farmer who is interested in carrying out the opinion of Mr. Jefferson, that "now we must place the manufacturer by the side of the agriculturist."

When that is done, and not until then, the fruits of the soil will pay for the highest improvement the soil is susceptible of. Then will the farmer's richest lands, which now he cannot afford to ditch and drain, be brought

under the plough, and afford the means of reviving the hills that have been exhausted—then, in short, these old Southern States, with their vastly superior soil and climate, would rival and surpass Connecticut, Vermont, and Massachusetts, and we should cease to hear complaint of want of capital for agricultural improvement, for they would spin their own improvement out of their own bowels, as the spider spins his web.

Then might we witness in these Southern States what a southern man would scarcely credit, were it not related on authority so unquestionable as Mr. Colman, who tells us in his Agricultural Survey of Massachusetts, that in one county, to which was apportioned by the legislature of the state $2000 of the surplus money distributed by the general government, the county commissioners decided that it should be loaned out at interest on good security to the farmers, but—southern reader! would you believe it, not a borrower could be found in the county! In what community would such a phenomenon occur, *except* where there is concentration. Where the plough, the loom, and the anvil are working close together and prosperously; where tons of strawberries are accompanied by tons of milk, and tons of carrots and potatoes are all borne along on the same road, to fill the bellies and bring back the money of industrious and thriving consumers—non-producers of *agricultural produce.* But we have said so much of New England, as exemplifying the benefits of union and concentration, and of simple contrivances for associating capital to lend money and build factories; and inasmuch as many of our readers may never have seen their beautiful roads, their nice, clean, new-looking houses, their everlasting stone-fences, their well-pruned thriving orchards, their green meadows, and their fruitful gardens, their rich dairies, and their country *school-houses*, it is time to adduce something in exemplification of

THE AGRICULTURAL ECONOMY AND CONDITION OF THE EASTERN STATES.

Under this standing head, we shall give, running perhaps from one number to another, many extracts from Mr. Colman's Report, passing to different subjects, pretty much at random, but always endeavoring to present facts and statements, which may show invariably how the presence of consumers will bring the food out of the ground; and how true it is, that if you would improve the soil, you must seek for the means of bringing in close proximity the plough, the loom, and the anvil—the miller, the tanner, the shoemaker, the tailor, the hatter, and the butcher—the coal-heaver and the ironmonger.

The first extract we shall make is one that, according to our plan, blends a legion of facts with instruction in hay-making. We believe that farmers, generally, in the south, are not aware of the loss they sustain, under the idea that hay requires to be much more *dried* in the process of curing, than is usually imagined. As Mr. Colman says, the danger comes, not so much from the undried juices of the plant itself, as from external moisture.

The extract relates to the town of Deerfield:

An example has been given to me of the product of one of these low meadows in Deerfield containing nine acres, at a place called Old Fort.

The first crop of hay was,	25,325 lbs.
" second crop,	15,120
	40,445 lbs.
The hay was sold and delivered as soon as cured, at nine dollars per ton,	182 00
The fall feed sold for	4 50
	$186 50

The whole labor was performed by contract at four dollars per acre for both crops, - - - - - - - - - - - - - - -	36 00
Leaving a balance in favor of the land, of - - - - - - - -	$150 50

The hay was considered as sold at a low rate. The same quality of hay in the following winter brought thirteen dollars per ton.

The land has been estimated at 100 dollars per acre. No manure has been put upon the ground. The produce in this case was not more than an average crop. This yield was at the rate of 4,494 lbs. to the acre. First crop, 2,813 8–9 per acre; second crop, 1,657 7–9 lbs. per acre. This constitutes some of the best land in the meadows. There is that, however, which is deemed even more productive.

We shall now give some extracts from his survey of the county of Middlesex, in which are embraced the towns of Boston and Lowell, that the reader may appreciate properly the friendly relations between the plough, the loom, and the anvil.

Pursuits of the Inhabitants.—The pursuits of the inhabitants are various, and trade and manufactures greatly predominate over the agricultural interest. Property to a vast amount is invested in the different manufacturing establishments, and especially at Lowell and Waltham. Many persons engaged in trade and commerce in the capital, have their residences in the vicinity in this county; and though in general their occupations are on a small scale, yet their means give them the power of free expenditure, and their establishments do much to improve and adorn the country. The capital, with the large towns in its vicinity, and the several villages and manufacturing towns in the interior, afford a ready and quick market for all the products of agriculture. This condition determines, in a great measure, the character of the agriculture of the county—which is confined rather to the production of vegetables, fruits, butter, and articles that find an immediate sale in the towns, than to products on a large scale, to be sold in great quantities or consumed upon the farm. Large amounts of hay are produced in many of the districts; but of this, likewise, no small part is sold in the towns, at taverns, to stage and wagon establishments, and not consumed upon the farms. In the immediate vicinity of the capital, the cultivation would rather come under the designation of garden culture than of field culture. In some parts of the county, this cultivation is carried to a high degree of improvement. A considerable portion of the rural population are themselves marketers, sending directly to Boston or other principal markets daily or weekly; and through every part of the county market-wagons pass at regular times, taking the produce of the farmers in butter, eggs, poultry, veal, &c., and selling it upon commission.

In addition to this, a large number of farms are devoted to the production of milk, which is sent to Boston daily, in some cases a distance of twelve or fourteen miles; and the small farmer, the keeper of four or six cows, disposes of his milk to the large dealer, who receives it on his route, or to whom it is sent in order to be taken to market. It is difficult to form an estimate of the amount exported, or the cash received in this way, and from these innumerable and various sources of income; but it must be very large. Sales of 1,500 dollars' worth of turnips from a single farm in one year; from another, of more than 1,200 dollars' worth of winter apples; from another, 300 dollars' worth of peaches; and another, of nearly 800 dollars' worth of strawberries, and early potatoes to the amount of 600 dollars from two acres, have been reported to me under circumstances which do not allow me to doubt the truth of these statements.

Indian Corn is raised, to a greater or less extent, on every farm, but it is cultivated exclusively for home consumption. It would be difficult, when all circumstances are considered, to name a plant whose uses are more numerous, or whose value is greater; and the cultivation of it might be extended to great advantage. Crops of 116 bushels have been produced in the county. Under good cultivation fifty and sixty bushels are obtained, but the average yield is not more than thirty-five bushels. When it is seen what can be done, and what ordinarily is done, it would seem as though the comparison must have its natural effect.

I shall give the statements of particular farmers as to the amount of their own crops; probably in this case the highest yield is given.

In Chelmsford, 70 to 80 bushels per acre. In Tyngsborough, 50 bushels and 70 bushels; the average yield through the town is supposed to be 40 bushels. In Dunstable, 30 to 40 bushels. In Tewksbury, 35 bushels. In Shirley, 35 bushels. In Lexington, 75 bushels. In Westford, 30 bushels. In Framingham, from 40 to 60 bushels. In Marlborough, 30 to 40 bushels; sometimes 50 bushels. In Pepperell, 40 to 50 bushels. In Groton, 50 bushels. In Townsend, 25 to 30 bushels; sometimes 40 bushels. These results are quite various; but I must leave them as they are given.

1. In Groton, the expenses of cultivating an acre of corn, allowing, as in all other cases, one dollar per day for labor, are given as follows:

Ploughing, 3 50; rolling and harrowing, 75, - - - - - - - - -	$4 25
Compost manure, 15 loads, consisting of 3 loads of dung mixed with loam, clear barn manure being not approved, - - - - - - - - - -	12 00
One man and one yoke of oxen, 1½ day putting manure in the hill, - -	3 00
Seed, 25; first hoeing and horse, 2 50, - - - - - - - - - -	2 75
Second and third hoeing and horse, - - - - - - - - - -	4 00
Topping stalks, 1 50; cutting up and gathering, 2 00, - - - - - -	3 50
Husking, 3 50, - - - - - - - - - - - - - - -	3 50
	$32 50

Returns—Stover = 1 ton of hay, - - - - - - - - - -	$12 00	
50 bushels corn, - - - - - - - - - -	50 00	
		62 00
	Balance in favor of corn,	$29 50*

Of two of the largest crops of corn ever raised in the county, it may not be amiss for me to give the particulars of the cultivation.

The land had been used for pasture ground for nearly thirty years. In the fall it was ploughed. In the ensuing spring it was again well ploughed, and planted with corn in the hills, in the common form; but well manured in the *hill* with a mixture of horse-dung, lime, and ashes. When the corn was fit for weeding, half a pint of unleached ashes was applied to each hill; a part, however, was left without any ashes. The difference between the corn which had ashes applied to it and that which had none, was very apparent. The corn had a slight ploughing when it was weeded, and was half-hilled early on account of its rapid growth. After this, a plough was not suffered among it, nor had it any more hoeing, except to destroy the worst of the weeds, and to stir in the turnip-seed which was sown among it. The product of this corn was at the rate of 78¼ bushels to the acre.

The same field was ploughed again in the fall after the gathering of the crop; and again well ploughed in the spring and harrowed out at a distance of four feet, leaving each furrow one foot wide. The furrows were well manured with a compost of horse-dung, lime, ashes, and dock-mud. The seed raised the last year was planted in the drill on every furrow, making three rows to each. Care was taken to drop the seed about six inches apart. When the corn was at a proper stage, it was carefully thinned; and after weeding, it was dressed with unleached ashes through each drill or furrow. It was half-hilled early in the season on account of its rapid growth, being undoubtedly strongly stimulated by the high manuring of the land the previous season. It had a slight ploughing at this season; and soon after half-hilling, the suckers or barren stalks were all carefully cut off.

The corn was planted in the latter part of May; the stalks topped the first week in September, at which time most of the corn was dry enough for grinding. On the 13th of October it was gathered, and a measured acre of this corn produced one hundred and eleven bushels and one peck. The soil was deep black upon a yellow loam, and that resting upon a gravelly and clayey pan. It will be found that, by this mode of planting three rows to each furrow, there will be more than double the stalks of corn on the same surface than if planted in the usual way.

I subjoin an account of the cultivation of another field of corn in the county.

The soil is a deep yellow loam. It was manured with ten cart-loads of green barn

* Many other cases are given, in all of which the reader would be struck with the items of expense, and particularly with the easy and familiar way in which the surveyor speaks of *large outlays for manure*, while in the Southern States, where anti-encouragement of American industry sentiments and legislation prevail, you will see men living thinly scattered over the country, and in many cases keeping from 50 to 100 head of domestic animals without saving as many bushels of manure. How apparent, and, to a superficial observer, how strange! In one end of the Union, concentration of population, good roads, numerous banks, steam-engines, busy factories, heavy products, and prices that justify an outlay equivalent to $32 50 per acre on corn, including $12 for manure. In other parts of the same union, where false notions and mistaken vicious legislation repels capital and scatters population, you behold bad roads, light crops, heavy expense of transportation, for only a few old staples to distant customers, and land a drug! Who has made a nice calculation to show that in Maryland and Virginia, generally, the wheat and the oats, and the corn, do not, in fact, *cost more than they come to!*

manure spread on the ground, and eight loads of compost manure put in the hills, and a crop of corn taken from it. The ensuing year it was twice ploughed in the spring, and twenty cart-loads of green barn manure spread on it. It was then furrowed in rows about three feet and a half apart; and about twenty cart-loads of barn, hog, and slaughter-yard manure were put in the rows: with the last manure was mixed a hogshead of lime. The kernels were planted eight inches apart in rows. The corn was hoed three times; all the suckers were pulled out in July; and in August were taken away together with the false and smutty stalks. On the 1st of September the stalks were topped; and on the 26th the corn was harvested and spread on a floor, under the roof of a long shed, that it might dry well. On the 14th November, the whole was shelled: it measured one hundred and sixteen bushels, and three and a half pecks of clear sound corn. Weight of the corn 56 lbs. to a bushel.

The value of the stalks and suckers was considered equal to two tons of English hay. The expenses of the cultivation were estimated as follows:—

Ploughing, 2 50; manure, 25 00; seed, 0 50,	28 00
Furrowing and planting, 4 00; hoeing, 4 00	8 00
Suckering and topping, 4 00; harvesting, 4 00,	8 00
	$44 00

This, it must be admitted, is an extraordinary crop, but the account is well attested.*

Oats are frequently made the second crop in the rotation. They are not grown to much extent, compared with the population and demand, though nearly one hundred and three thousand bushels are given as the annual amount to the Valuation Committee. The crop is rated upon an average at forty bushels to the acre. The price is generally about three-eighths the price of Indian corn. This is almost always above their intrinsic value, but the convenience in using and transporting them, and the constant demand for them in livery stables, secure a large price.

They are generally taken as a second crop, after corn or potatoes, the manure being applied to the previous crop.

1. The subjoined is one estimate of the cost and returns of cultivation.

Ploughing, 2 00; seed, three bushels, 1 50,		3 50
Cradling and harvesting,		2 00
Threshing,		3 00
		8 50
Returns—40 bushels of oats, 20 00; straw, 7 00,		27 00
	Balance in favor of oats,	$18 50

2. In Dunstable, the charges of cultivation are as follows:

Ploughing, 1 50; 3½ bushels of seed, 1 75,		3 25
Sowing and harrowing,		0 75
Cradling and stooking, 1 50; threshing, 4 00,		5 50
		9 50
Returns—40 bushels of oats,	20 00	
Straw, one ton,	8 00	
		28 00
	Balance in favor of oats,	$19 50

3. In Tyngsborough, the cost is thus given. The crop is taken after corn.

Splitting corn hills, sowing and harrowing,		2 50
Seed, two bushels of oats,		1 00
Cradling and tying up, 1 00; threshing, 2 00,		3 00
		6 50
Returns—40 bushels of oats,	20 00	
1 ton of oat straw,	8 00	
		28 00
	Balance in favor of oats,	$21 50

This is very light cultivation; and the land is ploughed once only for the whole course. The seeding too is small; very few farmers allow less than two bushels to an acre. Crops of sixty bushels and more are *frequently* raised, where the land is in high condition. In Worcester county, I have the assurance of the present Governor of the Commonwealth,

* The New York State agricultural society gave its highest premium, $20, to a crop of 64 bushels last year.

that he has produced *one hundred bushels to an acre;* and in Berkshire county, a crop of eight acres has averaged *ninety-six bushels to the acre.* The general yield through the State, however, does not exceed forty bushels. Two kinds of oats are cultivated in the State,—the common oat, with a branching and spreading top, and the Tartarian or horse-mane oat, so called from the seed hanging together in clusters on one side. The plants ripen at different times, and it is therefore improper to mix them in sowing. The Tartarian oat is generally of stouter growth than the common oat, and is about equally productive, the crops of one farmer within my knowledge, who has cultivated it for several years, averaging sixty bushels to the acre. His cultivation throughout, however, is of the best character, and his other crops correspondent.

Mangel-Wurtzel, &c.—Of other vegetables raised in the county it cannot be necessary to go into a particular account. The usual varieties are produced in all parts of the county; and the market in Boston is supplied with some of its earliest and best vegetables from the gardens in Middlesex. It would be interesting and useful to point out the particular modes of cultivating and forwarding these different varieties, but this would occupy more time and space than I now feel at liberty to devote to it. The details in these cases would excite surprise; and it might stagger the credulity of some persons to tell them that horse-radish, to the amount of sixty dollars, has been annually sold from two rods of ground; and that the cultivation of the common dandelion is a source of considerable profit. Many statements of this kind, which have been made, demonstrate how much may be accomplished by minute, concentrated, and well-directed labor.

A crop of mangel-wurtzel obtained in Charleston deserves particular observation. The soil on which this crop was grown, is described as a black loam with a clay bottom, on a gentle slope to the north-east. The year previous to the crop of mangel-wurtzel, three-fourths of the land was planted with potatoes, with a moderate supply of manure in the hills; the residue was in mangel-wurtzel and grass. Early in May, in the succeeding year, there was spread on said land about eight cords of compost manure, and ploughed to the depth of eight inches, and harrowed in the usual way. About the 20th of May, the seed was sown in rows about twenty-two inches apart, and the plants, when about the size of a goose-quill, were thinned to about eight or twelve inches apart. The thinning would have been done earlier, but the crop was threatened with wire-worms. The soil was kept loose about the roots, and the land clear of weeds. The under-leaves were frequently cropped, from which much excellent food was obtained for swine and cattle, and the sun and air were freely admitted to the roots. It was desirable to do this by the middle of September, that the crown of the roots might have time to heal. They were harvested in the third week in October. The crop produced 1433 bushels, or 86,961 lbs., or 43 short tons, and 961 lbs. The actual expense of producing the crop was thirty-five dollars. The cost was not quite two and one half cents per bushel. The quantity of land, one acre.

Beets are often a very profitable crop. They are raised in considerable quantities; are packed in barrels and shipped to the south. One dollar and a half is a common price for a barrel containing two and a quarter bushels. The farmer giving this statement has often produced 600 bushels to the acre. They are planted on ridges about four feet apart, in double rows; and the intermediate spaces are often sown with turnips. The ridge planting is decidedly preferred here for all vegetables of this kind. In my opinion, and so far as my own experience goes, which has not been small, it would be better to make the ridges about twenty-seven inches apart, plant the beets in single rows, and cultivate them with a plough. A very useful machine for planting beets is a wheel, set like that of a wheelbarrow, with pins projecting from the rim two inches, and placed eight inches apart, which is passed along on the top of the ridge, and the seeds dropped by hand into the holes marked by the pins. They may then be covered by drawing a rake-head along the top of the ridge. Too much care cannot be taken to perform all operations in planting, where the vegetable is afterwards to be cultivated, in straight lines. The work is by this means greatly facilitated.

Since making the above account, I have received a statement of a crop of sugar-beets grown this season on Nahant, Essex county, by Frederick Tudor, which I have no hesitation in laying before the agricultural community, though it may seem out of place. I shall give the account with which Mr. Tudor has favored me in his own words.

"In the spring of 1840, I caused about an acre of land of the pasture lands of this place, (Nahant,) to be fenced in and trenched twenty inches deep. The ground had never before had an agricultural instrument of any kind in it. It was a pasture of indifferent soil, with many stones in and upon it.

"The trenching consisted in reversing the soil for 20 inches in depth with the spade, and afterwards putting in all the stones (which were found) in the bottom; three inches of muscle-mud were put on them, followed by the turf and best of the soil; then two

inches of rock-weed and kelps fresh from the shores, or cut from the rocks; then the less rich part of the soil and more muscle-mud—the top left with the poorest and most gravelly soil. In all, there were about eight inches in perpendicular height of manure added to the soil, which, when pressed, might have been five to six inches in perpendicular height; so that the land had been moved with the spade a depth of little more than two feet. In the spring of 1840 it was sown with sugar-beets, but did not do very well, the top-soil being extremely poor. In the spring of 1841 I had it ploughed about six inches deep, but the plough did not reach any of the richer parts of the soil below, exhibiting little more than yellow loam and gravel. I caused 93 rods of this to be again sown with sugar-beet seed this spring; and after the beet seed had come up, had the land dressed on the surface, merely spreading it on, with fifteen cords of rich cow-yard manure. This caused the young plants to grow greatly. There has been no particular care given them, and indeed several patches in the ninety-three rods were to be seen where the seed had failed, and which should have been filled with plants if the object had been to try the utmost possible. During the dry weather in August, the tops of several of the rows were cut off for fodder for the cows. My own belief is, it would have been possible to produce on the same piece of ground, if much care had been taken, sixteen hundred bushels.

"I think the crop on my land has not been caused by trenching, but by the looseness of the soil and the top-dressing of rich manure of which I have spoken. The usefulness of a top-dressing, more especially in a dry season, is undoubtedly great."

The whole crop was carefully weighed and sold by weight. The amount, 42,284 lbs. This would be at the rate of 36 tons 746 63-100 lbs. net weight to the acre, or about 1300 bushels per acre at 56 lbs. per bushel. One of the roots, cropped and cleaned, weighed 31 lbs.

This is a highly interesting experiment and result. I have long desired an opportunity of witnessing, on actual trial, the beneficial effects of a thorough trenching;—but have never seen it except in the case of asparagus beds formed after the prescriptions of former times. The practice of subsoil ploughing is in fact trenching. I am much better satisfied with Mr. Tudor's result, than with the philosophy of his explanation. I believe much is due to the trenching of the soil, whereby it was rendered permeable to air, moisture, and warmth. The partial failure of the first crop after the trenching, may be in a degree accounted for by the fact, that the subsoil had been so recently brought to the surface, that it had not been acted upon and enriched by atmospherical agency. The deposit of the stones at the bottom in a kind of bed, served to draw off and to retain the moisture, which had its effects upon the growing crop. The bed of manure, though buried as deeply as described, since the earth above was light and porous, undoubtedly, in the evolution of its gases, contributed its full share to the growth of the crop. The top-dressing certainly was not without its great advantages, not only in supplying the necessary nutriment to the plants, but likewise, as is suggested, in protecting the soil from the severe drought.

It will be questioned by some whether so expensive a cultivation can be afforded. The price of manure is not given. If it were not overvalued, the first crop, even at five dollars per ton, or more than 180 dollars to the acre, would undoubtedly pay the expenses of culture and leave a large profit; but in the next place it is to be remembered that the land is now in condition for at least six or eight years' profitable cropping without any additional manuring.

THE SHEEP.

Let us survey a few of the valuable facts with regard to sheep, which have been noted during the past year. Mr. Pawlett, of Beeston, from a series of careful examinations, concludes that the general opinion is correct, that the sheep goes with young longer with males, than with females. He found that the longest time that any ewe went with

	Weeks.	Days.
A Ram Lamb, was	22	4
The shortest	21	0
The longest with an Ewe Lamb	22	2
The shortest	20	4

He says, "Cabbages planted out in April or May are the best food to make lambs fat that I ever met with; but they are expensive, and would scarcely pay any one to grow for sheep in a general way." Next to cabbages, white turnips he thinks are the best for lambs in September and October, and preferable to swedes, if they are not too old, and are cut by a machine. In a

careful comparative experiment, he found that in a month, eight lambs fed on cabbages and clover chaff gained each 11 lbs.; eight fed with swedes and chaff gained $8\frac{1}{4}$ lbs. Washing the food of the lambs he found to be prejudicial. During the month of December, 1836, he fed two lots of lambs with carrots and swedes. The lot fed with the unwashed, gained in weight each $7\frac{1}{2}$ lbs.; the lot fed with the washed, gained only $4\frac{3}{4}$ lbs. He approves of the early shearing of sheep; he says, "I am convinced that the sheep thrive much faster during the summer if their wool is taken off on the 1st of May, than if it were left on until the first or second week in June." From some careful experiments of Mr. Bruce, with linseed cake and other substances in sheep-feeding, he concludes that "mutton can be produced at a lower rate per lb. upon liberal use of foreign keep along with turnips, than upon turnips alone, taking of course the increased value of the manure into account;" that of this foreign keep, "linseed is the most valuable, and beans the least so; but that the mixture of both, forms a useful and nutritious article of food."

The *urine* of the sheep, "so valuable as a manure for every kind of crop," has been carefully analyzed under the direction of Professor J. F. Johnston. (*Trans. High. Soc.*, 1846, p. 309.) 10 gallons of the urine contain 7 lbs. of dry fertilizing matter. The *dry* matter contained, in 100 parts—

Dry organic matter, containing nitrogen	71·86
Inorganic or saline matter	28·14

The saline matter or ash contained, in 100 parts—

Sulphate of potash	2·98
" soda	7·72
Chloride of potassium	12·00
" sodium	32·01
Carbonate of soda	42·25
" lime	0·82
" magnesia	0·46
Phosphates of lime, magnesia and iron	0·70
Silica	1·06

The urine of the sheep, therefore, contains only a very small quantity of phosphoric acid in combination with lime and magnesia. It agrees very closely in this respect with that of the ox and the horse, in which no trace of phosphate has yet been detected. It abounds also, like the urine of these animals, in salts of potash and soda. It is especially rich in common salt, and in soda, which in the ash is in the state of carbonate, but which in the urine is no doubt combined with some organic acid. If it be natural to the urine of healthy sheep to contain so much soda, we may find in this one reason why they relish salt so highly, and thrive so much better when it is abundantly supplied to them. The organic portion of the urine contains in 1000 parts—

Water	928·97
Urea	12·62
Organic matter soluble in alcohol	33·30
Organic matter soluble in water, insoluble in alcohol	3·40
Organic matter soluble in weak potash, insoluble in water and alcohol	0·10
Organic matter insoluble in any of these liquids	0·15

Inorganic matter consisting of—

Sulphate of potash	0·51	20·09
" soda	1·32	
Chloride of potassium	2·05	
Common salt	5·47	
Sal ammoniac	3·00	
Chalk	0·14	
Carbonate of soda	7·22	
" magnesia	0·08	
Phosphate of lime and magnesia, with a trace of phosphate of iron	0·12	
Silica, with trace of oxide of iron	0·18	

For the Plough, the Loom, and the Anvil.

ON THE INFLUENCE, ACTION, AND DUTIES OF AGRICULTURAL SOCIETIES.

From a period anterior to the Revolution, up to the present time, we have had Agricultural Societies, coming and departing like the ghosts in Hamlet. They have seemed to possess all the elements and materials that could be desired to ensure the results for which they were organized; members full of zeal, intelligence, and practical knowledge, and the public favor—and yet, after all, the question arises with observing men, what has been the average increase through the country, in the product of labor applied to agriculture? and how much of that increase, where it has occurred, is to be attributed to these associations? and in what mode of action has their influence proved to be beneficial?

To me, it seems obvious that agricultural societies have relied too much on the mere effect of premiums offered for particular objects, the attainment of which, in most cases, developes nothing new, either in principles or in the application of principles. These premiums lead, it is true, in many cases, to the accomplishment of extraordinary results—to the production of a heavy crop of grain or vegetables, on a small piece of ground; or to the exhibition of an animal, a hog or a horse, remarkable for size and sleekness; but do they teach the Farmer, in ordinary circumstances, how such crops can be made, and such animals reared, by some new and economical method, within the means of farmers generally; and by means which it would be prudent and profitable for such farmers to adopt? For that seems to me to be the true question! If such were the effects of the proceedings of agricultural societies, should we not witness a general improvement in the face, and a general increase in the productions of the country? Should we not, instead of dispersion and depopulation, and impoverishment, witness concentration and increase of population and wealth? and with these the multiplication of schools, general improvement in the systems of education, and a higher degree of intelligence and civilization from year to year?

These premiums for fat sheep and heavy bullocks, and heavy crops on small patches, serve to stimulate, here and there, some rich or dilettante young farmers, to expend, in the particular cases, more than the object is worth, but, after all, what useful end is obtained that had not been reached before? The gentleman carries home his silver cup, or his diploma, to show to his good lady and his friends, but does it lead to a general or increased diffusion of *useful knowledge*—knowledge by which profitable ends may be generally reached by more profitable means, thus advancing the general prosperity of agriculture?—for, after all, that is the *great and the only desideratum.* Let the directors of these associations give us the measure of any given crop, or the weight of any particular animal, for which they have awarded a premium at any time, since the establishment of the American Institute, or the New York State, or any other society, and my life upon it, I can go back and show from agricultural annals, that as large crops, and as large animals, have been exhibited five and twenty or five and fifty years ago! Be it then repeated—have the average products of the land in the States, within the influence of these societies, been increased? Are population and wealth augmenting? Is education more diffused and ameliorated? Are the useful arts more flourishing? Is civilization advancing? Is public utility becoming more and more the standard of esteem and honor for men and men's actions? Is the sight of Christian blood shed by Christian hands becoming more generally offensive and horrible? Are the people more ready to look on war,

and the authors of war, with detestation, for all these results should be expected as the legitimate fruits of *improved agriculture*, as improved agriculture can only be the fruit of improved intelligence and higher civilization.

Is it, do you suppose, Mr. Editor, for any want of knowledge, how *to make poor land rich*, or for want of silver cups, awarded by societies, that you read in a Petersburgh paper, a few days since, that people are moving off in scores from such a country as lower Virginia, with its water facilities, its marl, its undrained swamps, its lime to be had for five cents a bushel—a country flooded with light shed by such a pen as Edmund Ruffin's?

True, however, and it is admitted with great pleasure, visible improvement has taken place, in many parts of the country; but to what are they to be traced? To the effect of the premiums offered for the same objects, for the last fifty years? By no means—these improvements have been achieved by the mind, labors, and zeal of scientific men, applying to *agriculture* the sciences, which are as essential to its success, as science is essential to progressive improvement in any other art or pursuit under the sun. Thus, who has given us the best dissertation and illustration on the principles of the *mould board of the plough?*—the most important part, of the most important implement ever invented for the use of man, except, perhaps, the printer's type? Mr. JEFFERSON, derided by fools for his "book knowledge." Who invented the system of hill-side ploughing, and the hill-side plough itself? GOVERNOR RANDOLPH, Mr. Jefferson's son-in-law. Who may be said to have almost discovered to us the use of that cheapest and most diffused of all fertilizers, *plaster of Paris?* JUDGE PETERS, laughed at by fools for his want of "practical" success as a farmer. To the action of mechanical genius, too, applied to the wants of agriculture, are we indebted for the great improvements attributable to *better and more labor-saving implements.* Thus has it been, not to agricultural premiums, offered and repeated for fifty years, for large crops, but to the genius of Prouty, that we owe the greatest improvement ever yet effected, in the application of the *centre draft* to that king of implements; as we owe the revolving rake, not to a premium framed to elicit the invention, but to the general demand for labor-saving machinery, for agricultural purposes, acting on the plain useful mind, of the unpretending peaceable Quaker PENNOCK. Yet do we hear of societies bestowing honors and medals—do agricultural societies, or agricultural committees in Congress, call on the representatives of the people, while they are giving medals, and swords, and pensions, for "brilliant" success in the slaughter of the human race, do they call for honors or emoluments to such benefactors as Prouty or Pennock? or such farmers as Capron, who teaches the moneyed man how he can profitably and honorably employ his capital in agriculture; or to such farmers as Havler and his neighbors in Montgomery, who teach the world how men without means may, in process of time by skill and industry, make poor lands *enrich themselves.*

If then, says the reader, the admitted zeal and good intentions of agricultural societies have been misdirected and fraught with no proportionate benefit to agriculture, what would you have them do? And to this I would respectfully answer, that they should so use their influence and means as to put into activity, by all the high and powerful motives that could be brought to bear upon them, the minds of ingenious mechanics to invent, for the farmer, some decidedly new and valuable agricultural implements or machines; and in the same manner, by the offer of adequate recompense, they should stimulate men of science to useful discoveries in the application of science to agriculture and horticulture, in a way that every year some new principle might be developed, or some known principle made useful

by a novel application, productive of remunerating results. Hear Liebig himself declare, in so many words, that "for the future, agriculture is to be indebted to the application of the appropriate sciences *for all material improvement*"—and yet we behold such an institution as the American Institute, with its high-sounding name, accumulating its thousands annually, procuring itself to be puffed all over the country, with its imposing array of "Committees of arts and sciences," &c., dribbling out its stereotyped diplomas, (for which the winner pays more than they cost,) for best hats, and shoes, and specimens of best soap and candles. Instead of offering hundreds for some new and valuable invention connected with agriculture and the useful arts, and for the best dissertations on questions admitted to form great desiderata in the prosecution of various industries, they offer, again and again, their old stereotype list of old premiums for old objects, making their place of exhibition a mere museum or show shop, for the convenience of mechanics and merchants to advertise their "goods, wares, and merchandise," and where women and children may be lightly taxed for seeing what it would cost them much trouble to see, but what they might find by going from shop to shop.

But, Sir, above all things, is it not incumbent on agricultural societies to inquire into, discuss, and understand; and according to their understanding, to bring all their power to bear on the *action of the governments, state and federal,* so far forth as that action is, or can be *made conservative of the landed interest* of the country, for the welfare of which such societies profess to be organized and to have their existence! Look at all other classes, with what keen, sharp-sighted sensibility they watch every action of the lawgivers of the land! Suppose a new duty is proposed to be imposed or an old one to be modified, don't you see the manufacturers, and the merchants, and the mechanics, repairing straightway to their "Halls" and their "Chambers of Commerce," as busy and as bristling, and as ready for self-defence, as a disturbed hill or hive of ants, or bees, or hornets? *But how is it with Farmers' and Planters' societies?* Not only too insensible to feel and too timid to speak, but actually impatient at being called on to *rouse up and think for themselves!* It is not doubted, for instance, that a large majority of those who may have been, if any have, tempted to follow the writer so far, would much sooner have read some sixteenth edition of a case of a cow yielding twelve pounds of butter in a week, or a piece of poor land being made to produce sixty bushels of corn, by the application of ashes and stable manure, and bone-dust and guano, than to be thus called on to exercise his mind in attempts to discover *what agricultural societies can do, more than they have done, to be really useful.*

For what are societies formed? Is it not to achieve, by *union*, what cannot be effected by individual strength or influence? As it takes two men to lift a log on the house, that one can easily roll to the place of building? How feeble is the voice of an individual imploring the ear of Congress, but let societies unite and demand attention, and the so-called Representative, by an instinct of self-interest and the love of place and power, will prick up his ears and be all attention. You, Mr. Editor, ventured in a memorial to each house, months since, to call upon Congress to do for instruction in the great business of agriculture, some *little* in proportion to what is done to gather and diffuse knowledge, by schools, and surveys, and maps, and charts, connected—not with the art of *feeding* but of *bleeding mankind!* And what have you heard of your memorial since? True it was presented in the Senate with force and eloquence by Senator Johnson. He, like a patriot and a man of some conscience and feeling, showed himself alive to the dignity

of agriculture, and to the indignity with which it is treated by Congress; all that a faithful sentinel could do he did—but what has been done by the committee expressly appointed to watch over the agricultural concerns of the country, as far as they are liable or susceptible of being affected by legislation? These gentlemen have seen voted away, and have themselves voted for thousands and millions for the *sword*, but apparently dare not whisper the claims of the *plough*, or the *loom*, or the *anvil*. To return to the spirit —the *animus*, that should guide agricultural societies in the use of their means, and their influence, there is not one in the Union that ought not to have made itself *heard and felt*, years ago, on the very topics presented in your memorial.

Finally, may we not hope, now that the war is ended, and a state of things seems to be approaching, that party ties are likely to be broken up, and farmers may begin to think for themselves;—may it not be hoped that instead of party meetings, we may have agricultural clubs formed all over the country, in which farmers may discuss, not only the means of practical improvement, but that on which, above all things, practical improvement depends—that is, the influence of the laws on the industrial pursuits of the country?

GARNETT.

DOMESTIC ECONOMY.

EXAMPLES OF, IN NEW ENGLAND.

IN some parts of our country, the idea prevails, that no young man can set up for himself, as a farmer, on less than three hundred or more acres of land, with a certain number of cattle, sheep, horses, implements, and other force and materials; and thus it happens that fathers not being able to bestow such means of beginning life, the son hangs on in a state of degrading and miserable dependence, without industry to labor, and destitute of the means of living without labor.

The great blessing of being reared, where to swing the axe, to handle the scythe, or to follow the plough, carries with it no inference of ignorance or debasement, but the contrary, is, that in such a country, personal integrity constitutes respectability, and health alone is necessary to independence; for in such countries young men are of all things most ashamed to be seen *idle!* and on a few acres, frugality and personal industry, with good sense to despise non-essentials, will make any man independent.

In one of the "AGRICULTURAL SURVEYS OF MASSACHUSETTS," elaborate and valuable in our judgment, as we have always thought, far beyond what they have credit for, Mr. Colman gives us the following sketch from real life, of the "*domestic economy*" of New England.

We think him too fastidious in withholding the *names* of such exemplars of what is most worthy of imitation and admiration. We can see no good reason why such instances of excellence in what is most useful to society, should not be as broadly proclaimed, and public esteem and homage be invoked for those, individually, and by name, who practise such virtues, as is done all over the world, and nowhere more than in this our Republic, for men of whatever grade, who have success in fields of blood, and to whom honors are measured in proportion to their success in the barbarous trade of human butchery.

Hence is it that we see men first selected and educated at West Point, at the expense of the farmers, chiefly,—to these when they graduate, a sword

is given, and on the point of it hangs a commission for life, beginning with a salary, equal at least to a thousand bushels of wheat, and bound to be increased as the officer lives and is promoted in peace or in war; and what then? Why, for the very reason that he *has* served his time in the *military*, enjoying a high salary and life-commission, for that very reason his son *is preferred* for the same favor. That these favors have been to a certain degree hereditary, for one generation at least, need not be denied—but what it imports the farmer to ask, and for agricultural societies to ask, is, whether it was ever yet known that a favor like this was claimed from the government, on the score of the highest possible excellence in the practice of the far more beneficent use *of the plough?*

Yet why? Can any man give a plausible reason why government preference should not be in like manner bestowed on the sons of such men as Wilder, and Lowel, and Phinney, and Whitney, and Ruffin, and Taylor, Doctor Thompson of Delaware, and Jones, and Pennock, and Prouty, and Hill, and Bowie, and Poor of Massachusetts—improvers of horticulture and of agricultural implements; and winners of prizes offered for *best cultivated farms*, in their counties and states respectively? and would not this be done, were agricultural societies to watch, as they should do, to enlighten public sentiment and to guide the action of the government in reference to the landed interest.

"Historians generally," says the classical Historian of Fruits, "seem to dwell with enthusiasm on the splendid achievements in which the cannon, the sword, and the bayonet, are chiefly instrumental,—we however regard these implements of destruction with far less reverence than we bestow on the spade, the rake, and the pruning-knife, which enhance the beauties of the spring and the luxuries of the summer, make our vats overflow in autumn, and secure us comforts for the winter. Not that we are insensible to the merits of the brave *defenders* of our country, but we wish to see those whose talents and industry have so greatly enriched these kingdoms by their attention to horticulture, partaking of the admiration and gratitude of a people who are daily enjoying the fruits of their labours. Has the most splendid campaign which our history boasts, secured the nation a treasure equal in value to the potato plant? or would we renounce the possession of ten of our best adopted fruits, to double the acquisitions of the last ten years by war? For it is not (says the elegant Bernardine St. Pierre) upon the face of vast dominions, but in the bosom of industry, that the Father of mankind pours out the abundant fruits of the earth."

In travelling over New England, one is frequently struck with examples of thrift, comfort, and humble independence, the direct results of industry, sobriety, and frugality, as instructive as they are beautiful. A benevolent mind always contemplates them with unmingled pleasure. They present themselves often in circumstances to ordinary view the most inauspicious. The conditions, which appear most unfriendly to success, seem to constitute the very grounds or occasions of it. The courage is kindled and the resolution strengthened in proportion to the difficulties to be met; and, in a manner the most encouraging to honest labor and strict temperance, they show the power of man, in a high degree, to command his own fortune. Massachusetts is full of these examples. I do not know that they are not as common in other places. It is impossible however that they should exist but in a condition of freedom, where a man has a freehold in the soil; where, unawed either by overgrown wealth or oppressive power, he wears the port and has the spirit of a man; and where, above all things else, he has the voluntary direction of his own powers, and a perfect security in the enjoyment of the fruits of his own toil.

It will not be without its use, if it does no more than present to the imagination a charming picture of rural comfort and independence, if I refer particularly to one instance which strongly attracted my attention. In one of those beautiful valleys in which the county abounds, where the surrounding hills in June are covered to their summits with the richest herbage and dotted over with the rejoicing herds, at the foot of the hills, near

a small stream which here and there spreads itself like a clear mirror encased in a frame of living green, and then at other places forces its gurgling waters through some narrow passes of the rocks, you may find an humble unpainted cottage, with the various appurtenances of sheds and styes and barns around it. Three or four stately trees present themselves in front of it. The door-yard is filled with flowers and shrubs; and the buildings seem to stand in the midst of a flourishing and full-bearing orchard, the trees of which are clothed with living green, with no suckers at their roots, unadorned with the nests of the caterpillar, unscathed by the blight of the canker-worm, and with their bark clean and bright, indicating alike the health of the tree and the care of the proprietor. Every part of the premises exhibits the most exact order and carefulness. No battered axe lies at the wood-pile; no rotten logs, no unhoused sled, no broken wheels, no rusted and pointless plough, encumber the roadway; no growling sow, with her hungry and squealing litter, disputes your entrance into the gate; no snarling dog stands sentry at the door. The extended row of milk-pans are glittering in the sun; and the churn and the pails are scrubbed to a whiteness absolutely without a stain.

The house is as neat within as without; for such results are not seen but where harmony reigns supreme, and a congeniality of taste, and purpose, and character, exists among all the partners in the firm. The kitchen, the dairy, the bedrooms, the parlor, all exhibit the same neatness and order. The spinning-wheel, with its corded rolls upon its bench, keeps silence in the corner for a little while during the presence of the guest. The kitchen walls are hung round with the rich ornaments of their own industry—the long tresses and skeins of yarn, the substantial hosiery of the family, and the home-spun linen, emulating the whiteness of the snow-drift. The floors are carpeted, and the beds are made comfortable, with the produce of their own flocks and fields, all wrought by their own hands. The golden products of the dairy; the transparent sweets of the hive, obtained without robbery or murder; the abundant contributions of the poultry-yard, the garden, and the orchard, load the table with delicious luxuries. There are books for their leisure hours; and there stands too the reverend bass-viol in the corner, constant like its owner to appear at church on Sundays, and kind always to assist in the chant of the daily morning and evening hymn. Better than all this, there are children trained in the good old school of respectful manners, where the words of age, and gray hairs, and superiority, still have a place; enured to early hours and habits of industry, and with a curiosity and thirst for knowledge, stimulated the more, from a feeling of the restricted means of gratifying it. There is another delightful feature in the picture; the aged grandmother in her chair of state, with a countenance as mild and benignant as a summer evening's twilight; happy in the conviction of duty successfully discharged, by training her children in habits of temperance and industry; and receiving, as a kind of household deity, the cheerful tribute from all, of reverence and affection.

Some may call this poetry; it is indeed the true poetry of humble rural life, but there is no fiction nor embellishment about it. The picture is only true; and if it were not a violation of the rules which I have prescribed to myself to mention names in such cases, and that I might offend a modesty which I highly respect, I would show my readers the path which leads to the house, and they should look at the original for themselves.

The owner, when I visited him, was forty-five years old. At twenty-one years old, he was the possessor of only fourteen dollars, and with the blessing only of friends no richer than himself. His whole business has been farming and that only. He married early; and though he did not get a fortune *with* a wife, he got a fortune *in* a wife. They have comforted and sustained their parents on one side of the house. They have brought up three children; and, with the co-labor of the children, they have given them a substantial and useful education, so that each of them, now of sufficient age, is capable of keeping a good school, as they have done, with a view to assist their own education. He began with thirty-five acres of land, but has recently added fifty-five more to his farm at an expense of nearly thirteen hundred dollars, for which there remained to be paid five hundred—a debt which, if health continued, he would be able to discharge in two years. The products of his farm are various. He raises some young stock; he fattens a considerable amount of pork for market, and occasionally a yoke of cattle. He sells, in a neighboring village annually, about one hundred dollars' worth of fruit, principally apples and peaches. Such a situation may be considered, in the best sense of the term, as independent as that of any man in the country.

Now what are the causes of such success? Persevering industry; the strictest and most absolute temperance; the most particular frugality and always turning every thing to the best account; living within his own resources; and above all things, never in any case suffering himself to contract a debt, excepting in the purchase of land, which could be made immediately productive, and where of course the perfect security for the debt could neither be used up, nor wasted, nor squandered.

ON THE USE OF THE DRILL.

Neglect of the Interests of their Constituents, by Members of Congress. Interesting extract from a letter from a Delaware Farmer.

THE advantage of *drill husbandry* over the old, slovenly, and wasteful mode, is clearly established in Delaware, some of your correspondents to the contrary notwithstanding. As an instance you saw, when at my house, a field of eighty acres drilled with eighty and a half bushels of wheat, the yield of which was nineteen hundred and twenty bushels. Yet more favorable results from this method of seeding can be shown. Mr. Kibler, a neighbor, drilled ninety bushels on fifty acres, on land that was better than my own, by at least one heavy dressing of marl. He reaped twelve hundred and twenty bushels. The mere saving in seed, when wheat is sold as it was last year, at $2 15 per bushel, is something; but when you add to this an increase of one-fifth in the entire crop, as Dr. Noble's experiments prove, *the drill becomes an important acquisition.* Besides, it looks more systematic and farmer-like—where will you find, throughout the whole Union, such improvement making in wheat culture, as in Newcastle county, Delaware? We have some three hundred thousand acres of land in this county. If it were divided into farms of one hundred acres each, and each farm possessing a drill, the improvement would be great in increased production, as well as in the saving of seed. The culture of wheat will extend—for let who will be President, the *loom* must come to the *plough.*

My dear sir, we want a larger share of practical farmers in Congress. Neither the committee on *public lands* or that on *agriculture* have ever given to them the attention required by their importance, nor will they, until the practical farmer, the hard-fisted interested man himself is sent there to defend his calling. No man should ever be sent to Congress, (nor ever shall by my nomination,) who has not shown some tact at attending to the *real business of the nation.* The majority of those from the learned professions, as soon as they get to Washington, manœuvre in every way to prolong their stay. If in favor with the powers that be, they besiege the White-house for a fat office for themselves, or for some or all of their kin; they entirely lose sight of the purpose for which they were sent there, *i. e.*, to legislate for the good of the whole nation, and particularly for that of their own constituency. Delaware has sent several delegates, whose names it is not necessary to repeat, who all abandoned the State as soon as we dropped them as politicians. These were all professional men, not interested like ourselves in the soil, and they all took care to make their principles chime with their own interests, caring only for *our votes!* In fifty years of legislation, to my knowledge, the price of grain has not improved. I remember going, in 1798, with my widowed mother to sell her crop. She got four shilling currency for corn, and ten shilling currency for wheat.

The committee on public lands have never yet discovered, that if they would establish looms in the valley of the Mississippi, to use up all the wool and cotton that are now, or to be hereafter grown there, the government lands in their charge would become as valuable as are the lands about Lowell, or at least those on the Brandywine; instead of which, of some twenty millions of acres of lands in market, but two millions are sold at the low price of $1 25 per acre; a large proportion of which again revert to the States in which they lie, being sold for taxes. Much of the public land, too, is "squatted" on by unprincipled men, and the government has not the nerve, if they have the ability, to remove them. Bowie knives are too sharp. The same culpable neglect of duty is chargeable on the *agricultural committee.* They have never made any report on the general agri-

culture of the country. They have never attempted to explain the cause of the frequent revulsions in the value of produce and lands.* What a glorious chance for distinction would a practical man find in drawing up either of these reports!

As an evidence of the darkness in which the anti-loom, and anti-anvil party are kept, I will state, that a week or two since, I sent an article to a leading paper of our own State, showing, that the building of a locomotive, at Newcastle, that cost $10,000, was of more advantage to the vicinity, by the increased demand for provisions to be consumed by the operatives engaged upon it, than was the commerce of France and Russia, in the year 1841. In that year, France and Russia together took but six thousand seven hundred bushels of wheat, and sixty-seven bushels of potatoes, although, as an inducement, we took from France alone $16,000,000, and from Russia $603,570 worth of goods, duty free. The paper referred to, for reasons best known to its editor, refused to publish.

[Farmers must expect their business to be neglected, and their interests to be abused, as long as they themselves manifest neither sense of wrong nor impatience at the neglect of their representatives. Even agricultural societies dare not whisper complaint, and thus things go on from bad to worse, as they always will, as long as men suffer themselves to be sheared like so many sheep, by their party leaders for party uses. Sloth, ignorance, and pusillanimity never yet saved any man or class of men from being ridden and ruined! —*Edits. P., L., & A.*]

BOOK KNOWLEDGE OF FARMERS:

DERIDED BY WHOM?

With a man of any reflection and honest care for progress in all the arts and employments of useful industry, there are few things more trying to his patience than to hear men, sometimes even gentlemen, who have some pretensions to education, and who therefore ought to know better, denouncing book knowledge, as affording any guide in practical husbandry. Now, to all such, and especially to practical men who succeed well in their business, and who have always something useful to impart, as the result of their own personal experience, does it not suffice to say—"I am obliged to you for what you have told me; your integrity assures me that it is true, and your success convinces me that yours is the right rotation, and yours the proper process, since I see that while you gather heavy crops, your land is steadily improving; but now, my friend, let me ask you one question further. What you have imparted is calculated to benefit me personally, and unless communicated again by me to others, with me its benefits will rest. Now, suppose, instead of the slow and unsocial process of waiting to be interrogated, and making it known, to one by one, as accident may present opportunities, you allow me to have recourse to the *magical power of types*, which will spread the knowledge of your profitable experience, gained by much thought and labor, far and wide throughout the land, that thousands may enjoy the advantages which otherwise I only shall reap from your kind and useful communication. Will not that be more beneficial to society, and is it not a benevolent and a Christian duty not to hide our lights under a bushel?" Doubtless such a man, if not a misanthropic churl or fool, would say Yes.

* Our correspondent is impatient. He ought to remember that these patriotic people-loving committees, have only been in a state of incubation for eight months. Let us wait another, and see what the regular period of *time* will bring forth.—*Edits. P., L., & A.*

Yet the moment, by means of types, such knowledge is *committed to paper*, it becomes the (by fools only derided) *book knowledge*. Such as follows:

Experiments with Manures on Potatoes and Turnips. By Lord BLANTYRE. (Communicated to the Philosophical Society of Glasgow by Dr. R. D. Thomson.)

EXPERIMENT I.—On Potatoes—Cow Park of Porton Farm—Soil poor and light—had been subsoiled previous autumn, after being drained and ploughed for oats from old grass in 1842. One drill, each plot for experiment with each different rate of manure being about one-thirtieth of an acre.

	Bolls.	Pecks.	
No 1.—Dung at the rate of 30 tons per acre	47	10	per acre.
2.—Nothing	10	2	
3.—3 cwt. Guano per acre	21	1	
4.—4 cwt.	25	12	
5.—6½ cwt.	34	6	
6.—7½ cwt.	31	4	
7.—8 cwt.	34	6	
8.—Dung at the rate of 30 tons per acre	43	12	

The boll is the Renfrewshire boll of five cwt. The wheat of this year (1844) appears inferior on the portion of the field where the above experiments with guano were tried.

EXPERIMENT II.—On yellow turnips—South-west field of Porton—Soil light. This field was not in very poor order, from having been in potatoes, dunged in 1841, wheat and barley in 1842. The other parts of the field not experimented on were dressed with bones, 30 bushels per acre, with 5 tons of ash dung. The crop was good.

	Tons.	Cwts.	Qrs.	
No 1.—Bones and dung as above, (30 bushels bones, 5 tons dung,) gave	23	17	0	per acre.
2.—3 cwt. guano	26	2	2	
3.—4 cwt. "	27	6	2	
4.—5 cwt. "	28	16	2	
5.—6 cwt. "	29	8	0	
6.—7 cwt. "	31	9	0	
7.—8 cwt. "	27	6	2	
8.—9 cwt. "	28	16	2	
9.—10 cwt. "	31	0	0	
10.—Calcined bones, 30 bush. per acre	25	8	0	
11.— " 45 "	24	12	0	
12.—Animal charcoal, 30 "	25	0	0	
13.— " 45 "	25	8	0	

The calcined bones were the riddlings of bones used in a china manufactory. The animal charcoal was got from some of the sugar refiners, called exhausted animal charcoal.—*From Proceedings of the Philosophical Society of Glasgow*, 1844, 1845.

WASTE OF FOOD IN FATTING CATTLE, &c.

So trifling is the interest that we take in the present rage for exhibitions of fat cattle, that we might be supposed to be disqualified, by this very assertion, to offer observations on the subject; but it is because but little judgment is shown, and so much wasteful error is committed, that we would draw attention to the evil, although we may acknowledge ourselves disqualified to enter the lists with breeders and fatters of kine and swine.

We have for some years past been so much disgusted with the rank, melting, oily state of the flesh of "show beasts," that it never is allowed to come to our table during the mania which pervades society about Christmas time, and while the Baker Street Bazaar extravaganza in London, is being exhibited to the gaping public.

Waste of food is essentially wrong; it therefore becomes a duty for all those who look on and grieve over the folly of "fatters," to point it out to those owners of stock whose intellects are too obtuse to discover for them-

selves the monstrous and unqualified mischief they are committing. It is a trite axiom, "Enough is as good as a feast;" yet, in the very face of a truism, in which so much is conveyed, our magnates of the land, our dilettante breeders and farmers, persist in gorging the creatures intended for our sustenance, to the very verge of that state in which they become unfit for food.

"There is but one step from the sublime to the ridiculous;" and of a truth a beast stuffed to repletion, and wearying under a cumbrous load of bloated fatness, has taken that step—that last step in its "ill regulated life," and is henceforth a scandal to its feeders, and a thing to be eschewed by all who have the fears of indigestion before them. One of the causes of the increase of illness during the Christmas consumption of show and prize animals, is doubtless to be attributed to the undue quantity of fat in a rank, unnatural state, which is at that season especially taken into the stomachs of the fond public. Chemistry, with its glorious powers of investigation, has shown the nature of fat, and its operation on the human frame; yet, in the face of its incontrovertible truths, this silly public crowds to the bestial shows in gaping spurious delight, and gloats over future feasts, of a nature so rank that the gorge of an Esquimaux would rise at them.

Cattle-shows were instituted, as every one is aware, ostensibly to submit the finest specimens of domesticated animals to the view of judges to improve our breeds of stock, and to excite emulation. The origin of all institutions is good—alloy is introduced by degrees; and in the course of time the cupidity and other bad passions of man supervene, and excellence becomes merged in corruption.* We unhesitatingly assert, that cattle-shows, in their present degenerated condition, have arrived at this state; and ought to be, if not abolished, so altered and remodelled that an entirely new order of things should be instituted.

That man must be a sorry physiologist who can suppose that fat constitutes health; that the genus alderman is a specimen of physical vigor; that the flesh (muscle) of an over-fatted animal, (however the coarse feeder may doat over the marbling of a prize sirloin,) can be in fit state for human food. Excess of fat is disease. The present aim of the race of fatters appears to be to produce the greatest quantity of tallow, the largest amount of dripping, and to establish themselves the kitchen-maids' best friends.

They who undertake the difficult and onerous duty of preparing stock for the food of man, ought to be able to bring to the task powers of mind of no common order. Any one can gorge a creature, but few can calculate the exact proportion of food at each meal to lay the largest portion of healthy flesh upon the bones of animals *short of repletion*, which is a state that should never be attained by man or beast; by the former, because his mental and bodily vigor would suffer; and by the cattle in his byre, because their comfort would be compromised and their value lessened.†

* This happens in more countries than one.—Ed.

† With the exception of the Smithfield Club, we believe no agricultural society now bestows premiums for, and therefore encourages the exhibition of over-fed oxen. The Highland and Agricultural Society relinquished the practice many years ago; and now that the capabilities of our native breeds of cattle and sheep to become fat, absolutely and comparatively, have been proved to demonstration, there seems no use of *wasting time and food merely to ascertain to what degree particular animals may be overloaded with superabundant fat.* The objections to over-fattening suggest a comparison of the fitness of byres and hammels, that is, confined houses, and small open courts with sheds, for fatting oxen in. In byres the animals must take the food as it is given them, in quantity and in time, and when under constraint it is quite possible for them to feel hunger at one time and be filled to repletion at another; while in hammels, the animals being free to choose both their food and the time when it should be eaten, eat and rest as it suits their inclination, and no animal that has its food at command will eat to repletion.—Ed.

A NOVEL PROPOSITION BY DR. EMERSON,

TO THE PHILADELPHIA SOCIETY FOR PROMOTING AGRICULTURE; WITH SUGGESTIONS GROWING OUT OF IT—*Currente Calamo.*

At the last June meeting of the Philadelphia Agricultural Society, a proposition, as useful as it was singular, was submitted by *Dr. Emerson*, the learned editor of the Farmer's Cyclopedia, to have a committee appointed to confer with the seedsmen of Philadelphia, and otherwise to inquire and report *the best and most practicable system for an early and effectual importation and trial, in the United States, of whatever is discovered and brought into cultivation and use in Europe, with the promise of economy and benefit to agriculture and horticulture, as soon as possible after the discovery, trial, and announcement of them abroad.*

At first view it might be supposed, that this, too, is one of the things which might safely be left, as indolence and procrastination would leave every thing, to take care of itself—under the common impression that the vigilance of self-interest, and the competition and benign effects of "*free trade*," will take care that no time be lost in securing for the country whatever it is the interest of American agriculturists and horticulturists to possess. Now, plausible as this *laissez nous faire*, this let us alone theory may be; nothing in practice can be more illusory. Of the truth of this, no annals abound in so many proofs, as those of the two kindred occupations, farming and gardening, to which we have referred. Paradoxical as it may seem, the very persons who are most deeply concerned, and whose peculiar employment it is to look after all that is new and promising in their line, are often the last, if not to discover—still they are the last to give *the order for importation and trial.* Vigilance and activity are virtues that are certainly not exclusively dug up and appropriated to themselves, by those who dig their living out of the ground. Generally speaking, they are rather of the *talking* breed—they have, for the most part, "*a great mind*" to do this, and to try that, but, alas! they ultimately fall into, and swell that great class that belongs to every country, and especially to *warm ones*, to the *laissez-nous-faire* school.

We might string together a long list of such practicable cases of doing good to agriculture and horticulture, as Dr. Emerson seems to have in view, which fall within our notice, in a somewhat wide range of reading in that direction, and which are often overlooked for a long series of years, unless they happen to attract the notice of some public-spirited, enterprising citizen, very apt *not* to belong strictly to either of those two departments of practical industry—as, for example, we might instance, and will hereafter, or in another place, give a full account of "*a variety of Italian rye grass*," lately brought into vogue in England, and which, *last year*, yielded on good authority, for soiling purposes, having been top-dressed with liquid manure, "nine or ten crops of excellent green food, between March and December," being earlier than either lucerne or common rye. How long before the practical man will send for that? Perhaps, the vigilance of self-interest, and that all-sufficient alacrity which we are told is the invariable accompaniment of perfectly "free trade," may have already secured for us, and if so, we should like to be informed where can be had some of the seed of a *Gigantic German Green.* There was growing, (as we are told in the Journal of agriculture of the Highland Agricultural Society,) in 1842, in the garden of Mr. John Murray, Easter Newport, Fife, a plant of German greens, of extraordinary dimensions. It was planted about four years ago, in the ordi-

nary way, in a corner of a plot, and at the time above specified, had attained the following size. It covered an oblong piece of ground, twenty-seven feet in circumference. It sent forth seven main branches, which supported other sixty-one branches, five of which bore seed in 1842, and in September of that year, the entire plant was in a healthy, growing condition.

The	1	branch bore	11	stems, which measured	9	feet 9	inches in length.
	2	—	8	—	7	— 3	—
	3	—	13	—	7	— 6	—
	4	—	15	—	10	— 0	—
	5	—	3	—	7	— 2	—
	6	—	10	—	6	— 0	—
	7	—	1	—	3	— 0	—

We might name also, the "*Chevalier barley*," that in Scotland, in 1845, yielded sixty bushels to the acre, and weighed fifty-seven pounds eight ounces to the bushel. Has any barley grower of Glo'ster county, in Virginia, or western New York, or elsewhere, imported that?

The average produce per acre of barley in New York, in 1845, was but sixteen bushels. The State is interested in its quality, since its quantity is more than three millions of bushels a year. Yet, has any one ever heard of an attempt by the American Institute, so liberally patronised by the State, to import that, or any other improved grain, seed, or implement? But can any duty be more appropriate for agricultural associations than that of vigilance in search of all such means of meliorating the productions of the plough and the spade?

We might again name the *Tussac grass*, sent to Lord Stanley, in 1844, from Governor Moody, of the Falkland Islands, who says of it:—"Under our present imperfect system, allowing the cattle to roam and graze at will, pulling out, wasting, and trampling as much as they eat, the rough irregular patches of Tussac on 'Long Island,' amounting together to about one hundred and fifty acres, keep in good fat condition for six months, (the cattle are kept on Long Island, only during the winter months,) two hundred and fifty cattle, and seventy horses. Under proper management, it is my opinion, that the same quantity of land would be found to maintain three times that number throughout the year. The grass rises *high above the snow*, is fresh and green all the winter, and, from its height, completely shelters the horses and cattle lying among it."

Governor Moody, perhaps, meant by "proper management," either confining the cattle and horses to small spaces at a time, or that the grass should be cut and *soiled*. In either case, his supposition is, that this grass which comes out in winter, "high above the snow," might carry more than *four head of cattle and horses to the acre*. Now, is it not befitting and proper, that the seed of such grass should be imported, and tried at once, in the reasonable hope that it might prove an invaluable acquisition to the sea-board salt water districts of the United States? Yet is it likely to be done by your practical farmer or your seedsman, under the all-improving influence of free trade? Why has not some disciple of the *laissez-nous-faire* school ordered a thimble full of the seed, at least, for that would do for an experiment.

We shall say nothing here about new implements and machinery, of which we have occasional notice, for we have already extended these remarks suggested by Dr. Emerson's proposition, beyond the limited dog-days' patience of most readers; but may it not be, that there is something peculiar in the kind of cucumber, mentioned in the following, which we find in the London Gardener's Chronicle, that might remunerate the very little trouble that would ensue, if for such cases we had some systematic arrangement for importation. It is to such cases as these, that we may presume Dr. Emerson referred:

Expeditious Culture of the Manchester Hero Cucumber.—From two seeds sent me under this name, I grew two plants, and on the 29th of March, I made a bed and planted them out in a small two-light pit, having metallic lights. On the 19th of April, I cut three fine cucumbers; one 16 inches long, another 14, and one 13. On the 26th of April, I cut one 18 inches long; on the 27th, do., one 13 inches long; and on the 29th, do., seven cucumbers, in order to strengthen the plants, measuring altogether 4 feet 2 inches. On May the 2d, I cut one fruit 12 inches long, and one 14 inches. The plants were turned out of 5-inch pots; they showed fruit at the time, and swelled at the length of 3 or 4 inches. I cut them off, thinking they would weaken the plants. The pit is 8 feet by 4½, and close boarded 3 feet from the lights, to prevent steam from entering. I placed rough boards, about 4 inches above the close boards, and on the rough boards, I put about 15 inches of dung; I then soiled the bed, and turned out the plants without waiting for the soil to get warm. The pit is worked by linings, and the soil was warm by the morning; the pit stands on piers about 3½ feet high. I once gained a first prize for cucumbers, in the beginning of April, and in a short time after, I threw the plants away, and planted out melons, which gained a first prize on the 30th of June, at Cirencester. I adopted the same plan with my cucumbers, throwing away plants that had been growing all the winter; I then took the soil and dung out of the pit, and put in fresh, planted out the plants, and the above is the result. I have used the pit for nearly twenty years, and have found it answer well in every respect; it is also an excellent place for striking cuttings in, plunged in sawdust or coal-ashes, near the glass.—*Thomas Pollington, Bradwell-grove, Oxfordshire, May 5.*

After all, it is quite probable that some of our well-disposed and intelligent seedsmen would willingly give orders through their agents, for whatever it might be supposed would be an acquisition to our horticulture; and only wait suitable suggestion and understanding on the subject, properly sanctioned, such as would probably grow out of Dr. Emerson's proposition.

But we must not close these remarks, without protesting in our own justification, that we mean no disparagement, by any thing we have said, of "practical men" in any department of industry. What would become of the world and its concerns, without such men—we only mean to contend that they do not lead the way always when acquisitions are to be made that demand inquiry, hazard, trouble, expense, and sacrifice. They are the only safe depositories of good things, after *they are found*, but are not apt to be the first to go out of their way to find them? Let us see.

ON THE CLAIMS OF THE "PRACTICAL MAN,"

TO BE REGARDED AS THE FIRST PROMOTER OF IMPROVEMENT IN AGRICULTURE AND HORTICULTURE.

Let us look at the few cases, such as most readily occur, to see how far great improvements have been effected and valuable importations of rare fertilizers, animals, fruits, &c. imported, and the knowledge and use of them diffused, by your exclusively hard-fisted, money-making practical men—for some men, wise beyond our own day and generation, would teach us to despise the services of all others. How long, for instance, should we have been comparatively ignorant of the virtues of that great universal fertilizer, *plaster of Paris*, had it not been for the inquiries and writings of Judge Peters, who was, as we are told, among the worst of practical farmers. A quarter of a century elapsed, after the senior Editor of the Plough, the Loom, and the Anvil, distributed and told, from Ulloa and Humboldt, all about the virtues and uses of *Guano*, without another dust of its being imported, until, within the last four years, when, with his indomitable energy in doing good things, Mr. *George Law*, of Baltimore, ensured success to the enterprise of the importers of the first cargo into Baltimore and New York.

Yet Mr. Skinner and Mr. Law have personally and pecuniarily little or no connection with practical agriculture.

And again: How long should we have remained ignorant or doubtful of the superior qualities, the fine shapes, and the early maturity of the improved short-horned cattle, had it not been for the perseverance of *Doctor Mease*, in calling attention to the subject, by proofs from English agricultural annals, and the yet more tangible and convincing evidence adduced by Colonel Powell—a gentleman of taste and fortune, not depending upon practical farming, and who, on personal inspection of the most celebrated herds of England, imported at great cost many of the finest specimens to be had there, and thus diffused their blood over the whole country?

When would the beauty and the excellence of the same breed have been displayed and acknowledged in Maryland, had it not been for the importation of Champion, and Shepherdess, and White Rose, into that State in 1822, by Mr. *Skinner*, merely to witness himself, and to demonstrate their excellence, which had been vehemently questioned by the largest if not the best practical farmer in Maryland; who, nevertheless, in twenty minutes after he saw them, gave $1500 for the three—about what they had cost; the agricultural society, on the motion of the late sagacious and well-known George Calvert, of Riversdale, voting three beautiful and costly pieces of plate to the importer, as a compliment for the service he had rendered in exhibiting living and incontestable proof of the high point to which the art of breeding had been carried in mother England—and this was all more than a quarter of a century after the public exhibition of the famous Durham ox that was computed to give 1400 pounds of net beef at three years old.

Was it, again, to the unfailing sharp-sightedness of individual interest—to the patriotic instinct of the practical man—which so many would have us believe, if left alone, would do all the good that need be done in the world—that we owe the importation and use of the pure and beautiful North Devon cattle, sent by the Earl of Leicester to the late patriotic merchant-citizen W. Patterson of Baltimore? or was it not rather to the winning manners of his magnificent daughter, the Marchioness of Wellesley, through whom they were presented to the father by the great Norfolk farmer, always ready, as he was, to evince his partiality for our country?

Was it to the enterprise or even the suggestion of your plain anti-book knowledge practical farmer, that was due the importation of the famous *Tuscany breed of cattle*—so patient of heat and so active in the yoke; and whose blood is yet discernible in their descendants on the estate of the late John Middleton of South Carolina? or was it not rather to the public spirit of the gallant Commodore Bainbridge, and his friend, that quiet practitioner of all the social and neighborly virtues, Purser S. Hambleton, of Talbot county, who jointly brought them to the United States?

And by whom was the country made authentically acquainted with their peculiar excellence for the yoke? Was the information the result of the inquiries and active patriotism of one of your money-making practical men, who are cracked up to us on all occasions for their instinctive sagacity and usefulness, independent of all book-knowledge? or was it not rather by the following extract of a letter from the gallant captor of the Frolic—Commodore Jacob Jones, that we were made acquainted with their great activity in the yoke and their constitutional adaptedness to hot regions? The letter was in reply to one from Mr. Skinner, the senior editor of "the Plough, the Loom, and the Anvil"—who had been appointed by the Albemarle Agricultural Society, under the presidency of the pure and patriotic Madison, to represent that society as its agent for the importation of a pair of Andalusian horses. Look, reader, at its *date*, and see how zealously and how long we

have all been laboring to bring up agriculture to greater productiveness and perfection—and, alas! to how little purpose!—because the tendency of our policy and legislation has been to keep us in colonial vassalage to the capitalists and the policy of England, and to scatter instead of concentrating our own population—to produce dispersion instead of the union of all—of the capital and the energies of all—for the benefit of all; but this aside—let us proceed.

United States ship Constitution, Gibraltar, September 16, 1822.

The cattle that I have seen in Spain, appear to be nothing superior to ours; nor have I seen anywhere on the coasts of the Mediterranean any that appear better than those in America; except a race of white cattle at Naples, used for the draught. I was informed by a gentleman, who, in supplying the government with timber, had used thirty yoke of them for two years, that during that time, they had constantly travelled from twenty to twenty-five miles a day, excepting Sundays and the holidays—the place from whence he drew the timber being from forty to fifty miles distant from Naples. He said they were the offspring of the Spanish Bull and Hungarian Cow, or the Hungarian Bull and Spanish Cow. They are generally fifteen hands high, their bodies long, thin and deep—legs long—a small light head, a sharp muzzle, resembling the deer—color entirely white, except a black nose, ears, and the tuft of the tail. They are most frequently worked in the thills of a cart, and are spirited and walk as quick as a horse, and appeared not to suffer from heat more than a horse.

Let us now turn from cattle to the dairy. Is it to the practical dairy-man that we must refer for the best dissertation to be found, on the preparation of the famous *Parmesan cheese?* or is it not rather to that non-money making book farmer, the author of our Declaration of Independence, (never yet fulfilled,) who while Minister to France, thought his time not misapplied in visiting the most celebrated cheeseries in Parma; there to watch and note the whole process from sun to sun? and do we not owe to the same inquisitive temper and fruitful pen, the most philosophical exposition of the true mechanical principles to be followed in the construction of the most important part of the most important implement of man's invention, (the *mould-board of the plough,*) the printers' types excepted?

Let us now turn to *fruit culture*, and the meliorating love of *trees, and vegetables, and flowers;* with which, as to give it a more romantic finish, Byron invests the character of his great Pirate—Lambro.

A taste seen in the choice of his abode,
A love of music and of scenes sublime,
A pleasure in the stream that flow'd
Past him in crystal, and a *joy in flowers,*
Bedew'd his spirit in his calmer hours.

Was it a practical nursery-man who planted the ivy that creeps over and clings to the venerable towers of Lagrange, for ever consecrated as the residence of the pure and patriotic Lafayette? Not at all! For ages to come will that type of true friendship, which clings to the object of its attachment even in its ruins, associate with its history the name of Charles James Fox, (the illustrious rival of Pitt,) who planted it. And again, one of our best vegetables and one of our choicest flowers were brought from South America, by Mr. Poinsett, much better known for literary taste, travels, and scholarship, than for his practical knowledge as a Planter.

In very truth, if the truth must be told, it ought to be allowed that your exclusively money-making and most successful practical men are not very apt to entertain any decided penchant for the literature and refinements of their profession, or much of that sensibility to the beauties of nature which invests the simplest flower or the humblest insect with something of interest, and that can hallow even an old tree with ordinary associations—such a tree for instance as the old poplar on St. John's College-green at Annapolis. It was not of a practical farmer, but of Passienus Crispus, a famous orator, who was twice consul of Rome, and afterwards married the Empress Agrippina,

of whom we read that he was so much attached to a beech tree in a grove near the city of Rome, and carried his enthusiasm to such a pitch, that he not only reposed under it but sprinkled it plentifully with wine, and would even embrace it.

It was not the practical Farmer, but the Poet, who thus inculcates the practice of the beautiful and conservative art of grafting.

"———————— graft the tender shoot,
"Thy children's children shall enjoy the fruit."

VIRGIL.

It was Catharine, Empress of Russia, who so far encouraged the fruit culture as to send every year to England for the "Pippin d'Or," and that she might have them in the greatest perfection, ordered each apple to be separately enveloped in silver paper, before they were shipped.

The Horse Chestnut, so judiciously recommended by Mr. Cresson to be planted around the Pennsylvania Hospital, was not introduced in Europe, whence we derive it, by a professional nursery-man, but by a man of letters, Clusius, a botanist, who derived it not from a nursery-man, but from the Imperial ambassador of the Porte, together with a considerable variety of trees, new to Europe. The oldest trees of that family, from the leaves whereof the first of mankind "made themselves aprons"—that are now growing in England, are said to have been planted by Cardinal Pole, who brought them from Italy during the reign of Henry the Eighth.

The Green-gage Plum, properly the *Reine Claude*, was introduced into France, not by a practical gardener, but by Queen Claude, wife of Francis the First of that country:—and thus we might go on with an endless list of fruits and vegetables, showing how they have been first transferred from one country to another, by men of science—ambassadors, divines, professional men, and cultivated navigators; and not only not generally, but not even at the suggestion of *practical men*—but by your much-derided *book men!* They have been such men as Doctor Muse, and Doctor Thompson, and Doctor Bain, and Doctor Darlington, and Doctor Brackenborough, and Doctor Birkhead, and Doctor Wilkins, and Doctor Emerson, and Doctor Bachman of Charleston, and Doctor Cartwright of Natchez; and men whose minds have been enlarged and refined by cultivation, to whom the world owes the promotion of free commerce, and wide-spread cultivation and enjoyments of the fruits of a refined horticulture, and even many mechanical inventions.

Having referred to Mr. CRESSON in connection with the Horse Chestnut tree, we may take the further liberty to say, by a letter which does him honor, in a late number of the Colonization Herald, that he has prevailed with twenty of his friends to subscribe $30 each, for planting entirely around the Pennsylvania Hospital, outside of the wall, a row of shade trees, in anticipation of the final decay of the noble old sycamores now there, &c., and which came from the estate of his great-grandfather nearly a century ago. Now, without having been long enough in Philadelphia to speak from personal knowledge, we will venture to say that the list of these amiable right-hearted contributors does not consist of your money-making practical farmers, worshippers of the almighty dollar, with whom on all appeals to their better feelings, the first, and the last, and the only question is too apt to be—"*what shall I make by it?*" Furthermore, we will venture, without the pleasure of knowing one of them, that they are not *men of blood!* men who think it wise in a republican people to bestow all their honors upon, and to pay eighty per cent. of their taxes for supporting military men, and warlike and war-making establishments, *as do the people of the United States.* Here is a list of the gentlemen who gave $30 each for *planting shade trees*, that

may perchance shelter the sick and aged and way-worn from the scorching rays of a noon-day mid-summer sun, and greatly serve to beautify that part of the city; but which in all probability will never *put a dollar in the pockets of the contributors or anybody else's pocket.* We choose to record their names in our fleeting annals, because it is almost an *idiosyncracy of our constitution,* to do honor, in our poor ineffectual way, to men of such benevolent and refined, though it may be *non-money-making* tastes.

The subscribers agree to pay the sums affixed to their respective names, [$30 each,] for the purpose of planting around the Pennsylvania Hospital a belt of forest trees to encompass the entire square. Such a promenade will secure to our fellow-citizens healthful recreation, while it promotes the beauty of our metropolis.

Elliott Cresson,	David Jayne,	Jacob T. Bunting,
William R. Lejee,	R. W. Sykes,	John Siter,
John Farnum,	M. W. Baldwin,	John Towne,
W. Chancellor,	Caleb Jones,	Samuel Rhoads,
John B. Meyers,	F. Fraley,	Wm. E. Hacker,
James Gibson,	Adam Eckfeldt,	Thomas P. Cope.
C. E. Spangler,	Robert F. Walsh,	

Philadelphia, May 21, 1847.

Though ready at all times, then, to do justice to practical men, without whom the guns could not be worked in battle, nor the sails be reefed in a storm, they are not always the most skilful to stand at the helm, nor the most intrepid to go aloft. A man may heave the lead, that cannot by a long shot tell you the latitude and longitude of the ship, and so it is, that according to our reading and observation, it has happened as well in other fields as in fields of agriculture and horticulture, as well in mechanics as in physics, the most valuable discoveries and importations have been made by men whose minds have been relieved of the yoke of habit and of prejudice, and animated by cultivation and travel, and by extensive intercourse with books and with the world.

WHEAT,

ITS CULTURE AND MANAGEMENT.

Could any thing new be said on this subject so important to so many people, now would be the time; but the farmer would be much more obliged, by being told where he is to find a *remunerating market,* and how such a market is to be rendered steady and reliable, from year to year, than to have suggestions for increasing his crop.

As to the markets, in the new view we have taken, of what our duty and the interest of the farmer demands, we shall throw what light we can on that subject; and as we began, so we repeat, that the farmer should promote a policy that will bring the consumer to the side of the producer—one that will bring the loom and the anvil, the saw and the lapstone, nearer and yet nearer to the plough.

In a practical point of view, as respects this noble grain, the question is not settled, how far and under what circumstances the very first operation is to be accomplished—by the *drill* or by broad-casting; there are warm advocates for each, in comparison with the other, in England. There, however, many circumstances affect the question that do not apply in this country. There, we apprehend the crop is liable to be impaired by a stronger growth of weeds than with us, and this results either from the superior strength of the land, or from their lands being infested with various kinds of weeds that we have not; and again, our dryer summers may be fatal to weeds that are almost indestructible in their moister climate.

Drill husbandry of grain, in England, is always spoken of in connection with the use of the *hoe*, horse-hoe, or hand-hoe, or frequently both. If we had room we would give a list of the weeds injurious to crops in England, that the farmer might judge how far we are liable to, and how far exempt from the same pests. One of them, described by Holdich in his pamphlet on "The Weeds of Agriculture," we take to be the vile "*coco grass*," so much and so deservedly dreaded and hated by the sugar and cotton-planter; we give its portrait, that our friends on the Mississippi may tell us if they recognise it as the same.

"Tall, oat-like, soft grass, (*Holcus avenaceus.*) This is the knotted-rooted couch-grass, which though admissible in pastures, is a sad plague in corn, [small grain.] It grows in tufts, the stems rising as high as the grain, and the roots, consisting of strings of round tubers, by which the plant propagates itself, as every one of which, if broken off by the plough or harrow, becomes a new plant. The best way of extirpating this weed, is by digging up the tufts of roots out of the stubble, making a pile of, and consuming them with fire." This remedy would seem to be almost as troublesome and hopeless, as the Frenchman's prescription for getting rid of fleas.

In the United States it is evident that labor is too expensive to admit the culture of wheat with the hand-hoe; but is it so clear, that something like Davis's shovel-plough might not be profitably employed in wheat culture? "We only ask for information."

It would seem to be conclusive, on the testimony of Major Jones of Wheatland, Doctor Noble, and others, and there need be no better, on the score of judgment and candor, that the experiments in drilling wheat in Delaware have been attended with decided advantages; and besides, it should weigh heavily with every farmer, mindful as every farmer should be of his professional character, that, as Major Jones says, *it looks "more farmer-like."*

It will be seen, however, by an experiment lately in England, that the same quantity (2½ bushels to the acre) sowed broad-cast, yielded over that which was drilled at 9 inches, a superior crop in quantity and quality, both of grain and straw.

Not knowing what better appropriation we could make of our space at this season, we shall give as much as we can find room for, which may appear to have any chance of being new; for we confess to a profound dread of over-doseing—we might say, over-dozing our readers with what has been oft-times repeated, in substance, though it may be in different words, as baits are variously gilded to catch gudgeons.

My Dear Sir,—In reply to your request that I would communicate my views relative to the drilling wheat, I shall limit myself to a few observations, the subject having been amply treated in the agricultural periodicals, and standard works, with which you have been instrumental in filling the book-cases of our most intelligent farmers. The practice of sowing wheat with drill machines has been so long and extensively practised in England, that the results of experience there, would seem conclusive upon the subject. Still some English farmers are to be found, who think that more wheat can be raised by the old broad-cast method. I would particularly call your attention to the impropriety of making European experience in farming, too strict a text of what is most advantageous for the United States. The sowing of wheat in rows about nine inches apart, admits of cultivation by the harrow, and especially of hand-weeding, a very important consideration, where the frost is not so intense as to destroy almost every thing but the wheat itself. Here, then, is an advantage gained by the English farmer, over what we might expect in the wheat-growing parts of our own country. The same intense frost which kills most American weeds, contributes to crack the ground and denude the roots of the wheat, often doing extensive injury. It is a common opinion among farmers, that wheat does better when sown on ground left rough and cloddy, than when the earth has been most carefully pulverized by means of frequent harrowing and rollings. I ascribe the advan-

tage gained by sowing on rough ground, to the pulverization of the clods during successive freezings and thawing, which thus contribute to cover the roots, that would in smoother ground, remain exposed until destroyed. Now, one great advantage derived in the United States from the practice of drilling wheat, is from placing the young growth in a hollow or furrow. This not only serves to guard the wheat in some degree from the frost, but where the roots become exposed, the earth crumbling from the sides soon covers and protects them. Drilling is extensively practised by many of the best farmers in the flourishing counties of Lancaster, Chester, Pennsylvania, as well as in Delaware. Its rapid extension is pretty good evidence that some important advantages are gained from it. In England, the higher price of grain makes the saving of the seed by drilling, a primary consideration. But in the United States, the saving of wheat is a secondary object, and not of itself sufficient to compensate, if other advantages are not added.

There is one important advantage to be obtained through the adoption of English Drill Husbandry, to which I have not yet adverted, and that is, the facility afforded of applying concentrated manures at the same time of sowing the grain, with which it is covered in. A comparatively small amount of manure, such as finely ground bones, guano, poudrette, etc., covered in with the seed, can be made to produce the effect of heavy dressings, a most important consideration in the economy of the farm. None of our drill-makers, so far as I know, have yet adapted manure chests to their machines. We hope to see this complaint speedily removed, and it would afford us very great satisfaction to see a fine drill, like that of the Messrs. Pennocks, for example, at the next exhibition of the Philadelphia Agricultural Society, with a well-adapted manure chest. Such a machine is an important desideratum for our farmers, who are now learning the proper value of concentrated fertilizers. I remain yours, very truly,

Philadelphia, July 1, 1848. G. E.

Doyle, in his Cyclopedia, says:

Wheat is sown on naked fallows (manured), (see *Fallowing*,) or after manured fallow crops, such as potatoes, turnips, or beans, or on clover leys. The different modes of sowing, whether in drills or broad-cast, may be thus described: If in drills, the ridges should be of such a corresponding breadth with that of the drill machine,* as to leave no surplus space after the turnings, two or more times according to the breadth of the ridge, which, for this grain, should not exceed twelve feet.

The seed being deposited from the hoppers, is covered by a double or single turn of light harrows drawn lengthways. If there be no drill machine, a small common plough, divested of its mould-board, answers the purpose, and the seed may be sown broad-cast from the hand; the harrow moving lengthways, as in the other case, throws the earth which has been ribbed up by the plough back again, and covers the grain which comes up in parallel rows.

By the drill machine, the intervals between the rows of wheat can be easily made at nine inches, which is the usual distance—by the common implement, they cannot well be made narrower than twelve or fourteen inches; and this, besides the loss of horse-labor, is a serious objection to those who prefer the narrow drill. But many excellent farmers are of opinion that even a wider interval than twelve or fourteen inches is profitable, as this allows the horse-hoe to work effectually between the drills, admits of deeper pulverization, more horizontal expansion to the fibres, and greater tillering, besides affording more circulation of air.

Fallowing is, no doubt, the best preparation for wheat; but it is not an economical mode, and will not succeed without some animal manure or calcareous matter. If the soil be perfectly drained, or naturally absorbent, wheat will bear a great deal of severe weather in winter; nor will any frost materially injure it, particularly if it be protected by snow; but the cold winds in spring, when of long continuance, are more or less injurious, and the more so if rolling be neglected.

The hand-hoe can be used freely between the rows at nine inches; it serves to cut away weeds, and is in some degree conducive to the tillering of the plants; but it does not cut deep enough to give that extension of movement which the horse-hoe affords to the fibres—we, therefore, on the whole, prefer twelve-inch rows and the small horse-hoe.

*Cook's improved drill machine is the best, and of most general application. The Norfolk drill is larger in its scale, and constructed to sow a breadth of nine feet at once. According to the breadth required between the rows, will be the number of drills sown by this machine, the hoppers of which should be movable and easily adjusted, so as to have the rows at seven, nine, ten, or twelve inches apart.

Pennocks' improved drill is considered superior to any English drill for sowing wheat; its cost is $100.

It is deemed proper to give here the particulars of an experiment in broad-casting and drilling, which we find in the Quarterly Journal of Agriculture; and once for all we would estop the stale objections to reference to English authority, on the ground of difference of climate, by observing, that we hope our readers have generally too much good common sense, (for that is all that is needed,) not to be able to allow for that circumstance. But the *principles* of every science are the same everywhere; and would it not betray the height of ignorance and absurdity, to conclude that because, in England, there is more moisture and less frost than in the same latitude in this country, therefore there can be no analogy in any particulars, nor any application of rules and principles, that, in the nature of things, are fixed, eternal, and of universal applicability? We have too much respect for our patrons, to suppose them destitute of the common powers of discrimination.

The following is the result of some experiments which I made last year, in order to ascertain the relative merits of thin and thick sowing wheat, drilling, dibbling, and by broad-cast. They were conducted with great care upon five acres of level land of uniform quality, being a good deep loam on a chalk subsoil, following a clover ley folded by sheep. The land was ploughed about five inches deep, as it was not thought desirable to bury the sheep-dressing below that depth. The seed was put into the ground about the 7th of December, 1843, and the wheat was hoed in the spring of 1844, except the acre sown by broad-cast, which was harrowed instead of being hoed. The plants in Nos. 2 and 3 (thin sowings) were by much the strongest, and looked the best throughout the season, until the approach of harvest, when it became evident that the quality of the grain and straw was inferior, more particularly on No. 2, which appeared to have suffered a little from mildew.

Samples of the different lots were submitted to an eminent miller, and the value of each determined by him; the straw was valued at the market price.

ACCOUNT OF EXPERIMENTS on the relative Merits of Thin and Thick Sowing, Drilling, Dibbling, and Broad-cast, conducted on Eastwick Farm, in the County of Surrey.

No.	Quantity of Seed used per Imp. acre.	System pursued.	Grain produced.	Weight per Bushel.	Straw produced	Value of Grain.	Value of Straw.	Total Value of the Produce per Acre.
			bush.	Lbs.	Trusses			£ s. d.
1	2½ bush'ls	Drilled 9 inches apart	Head . 34 Tail . 3 37	64½	70	Head at 7s. per bush. £ 11 18 0 Tail at 6s. 0 18 0 12 16 0	At 36s. per load 3l. 10s.	Grain . 12 16 0 Straw . 3 10 0 16 6 0
2	1 bushel	Drilled 12 inches apart	Head . 22 Tail . 3 25	62½	51	Head at 6s. 6d. per bush. Tail at 5s. 6d. " 7l. 19s. 6d.	At 30s. per load	Grain . 7 19 6 Straw . 2 2 6 10 2 0
3	1 bushel	Dibbled 12 inches apart	Head . 28 Tail . 3 31	63½	63	Head at 6s. 9d. per bush. Tail at 5s. 9d. "	At 33s. per load	Grain . 10 6 3 Straw . 2 17 9 13 4 0
4	1 bush. and 3 pecks	Dibbled 9 inches apart	Head . 34 Tail . 3 37	64	72	Head at 6s. 9d. per bush. Tail at 5s. 9d. "	At 33s. per load	Grain . 12 6 9 Straw . 3 6 0 15 12 0
5	2½ bush'ls	Sown broad-cast.	Head . 37 Tail . 3 40	65	64	Head at 7s. per bush. Tail at 6s. "	At 36s. per load	Grain . 13 17 0 Straw . 4 4 0 18 1 0

The results of these experiments are very remarkably in favor of thick sowing, and particularly of the old broad-cast system; and if not conclusive against the doctrine of thin sowing, so strongly, and, I may add, so ably advocated in the present day, should at least induce caution on the part of farmers before they depart from the practice of their forefathers. Indeed, it is difficult to believe that so great an advantage as the saving of a bushel or a bushel and a half of seed per acre can have been overlooked for so many generations. It seems more reasonable to suppose, that long practical experience has taught the farmer the more prudent course of a liberal supply of seed. It may, however, be contended, that had the ploughing been deeper, and the seed put earlier into the ground, the result would have been different: this is not improbable, and it is pos-

sible the deficiencies in the quality and quantity of thin-sown wheat and straw might have been less observable, but the large differences which my experiment indicates could hardly, I think, have been made up. I have this year repeated the trial of thin-sowing, having drilled one acre on the 26th of October last, (the land having been *deeply* ploughed,) with one bushel of seed, the rest of the field having two bushels per acre. The result I shall be happy to communicate if desired.

We must conclude all we have room to say about wheat, with the following extracts from a prize essay on its management by Edward Roberts, (not our friend Edward P. Roberts, nor, we will venture to say, by a better man,) postponing for the present what may be as well said hereafter, on the TREATMENT OF CROPS IN SPRING—THE TIME OF CUTTING, AND ON THRESHING AND DRESSING. Before another season, we hope to have more extended and satisfactory accounts of Hussey's, and other *mowing machines*.

P. S.—These extracts must be postponed, for want of room, to our next number.

EXAMPLES OF HONORABLE ZEAL

IN THE PURSUIT OF AGRICULTURAL KNOWLEDGE BY YOUNG AMERICANS.

WITH well-constituted minds, what impression so agreeable as that which accompanies a consciousness of increase of our stores of useful knowledge? Such as results from the perusal of a truly original essay or address, like one we have lately read, by the Hon. Mr. Marsh, in Congress, from Vermont, delivered before an Agricultural Society of that State; and which, as well for its philosophy as its rare scholarship, we shall be glad to preserve in our columns. Such, too, is the satisfaction one derives from new and powerful books, like Carey's Past, Present, and Future, that makes us feel as we pass from page to page, that something *sticks*, to make us a little wiser, and, perhaps, a little better; for is it not true, that knowledge is *virtue* as well as power?

In perusing the following paper from one of our young countrymen, laudably pursuing agricultural studies abroad, the pleasure it affords results, perhaps, not more from the valuable suggestions it contains, practically instructive and important as these are, than from the fact it discloses that some progress is actually making in agricultural literature in the United States, too; and that some of our most promising young men are seeking honor and fame, by qualifying themselves to apply to the cultivation of the soil those sciences, which are as necessary and as embellishing to agriculture, as to any other pursuit under the sun.

But here again, let every reader, at all mindful of the rights and interests of agriculture, note the difference in the action of the government, (and that, too, under the sanction of the so-called *representatives of the landed interest*,) in its treatment of those whose ambition and pursuit it is, to multiply the comforts of life, and those whose profession it is to *destroy it!* Our government, in its practical operation, under all parties, labors under no want either of power or inclination, to send our *military* young men abroad, to pay all their expenses, and to place them in all respects under the most favorable auspices for studying, at the best and most expensive schools, the *art of war!* In Congress, we see almost every day, thousands on thousands voted away, for *military* surveys, and maps, and roads, and expeditions, even to the "Dead Sea"—when no other place or pretext can be found; but not a dollar can it give for *agricultural surveys, or for the support of agricultural schools*, or for young men to go, like Mr. Norton, of Connecticut, and

Mr. Summer, of Carolina, to study, under able professors, and in the best appointed laboratories abroad, the application of the appropriate sciences, to the more civilizing, fruitful, and beneficent art of terraculture. Nor is one whisper of remonstrance or expostulation heard from *committees appointed to watch over the rights of the planter and the farmer;* and they themselves submit without a murmur, and as patiently as sheep to be shorn, while the government, under all administrations and parties, takes *eighty per cent. of the taxes they pay, to support its military establishments in time of peace!*

P. S. Will some one give us the *names* of the members of the agricultural committees in Congress, that we may hold them up to the admiration of the country, and the gratitude of posterity, for their extreme vigilance and energy—for the wide range of their inquiries, and the profoundness of their reports, on the condition and wants of the plough; and how the landed interest is, or might be affected, *for good or for evil, by existing or by needed legislation?* Surely, the marks of their service will endure as long as writings on the sand-beach at low water-mark.

From the South Carolinian.

SUGGESTIONS AS TO THE SUCCESSIVE CULTIVATION OF COTTON AND INDIAN CORN—ROTATION OF CROPS, ETC.

BY THOMAS J. SUMMER.

My attention was directed to the necessity of a correct understanding respecting the constituents of these two important crops, by the planters of South Carolina, from reading Boussingault's Analysis of Indian Corn, and I hope to show scientific causes, sufficient to render this necessity apparent to interested readers. I will commence by merely calling their attention to the amount of phosphoric acid abstracted from an acre of fertile land, in producing one bale of cotton. We take it for granted, that an acre will yield one bale of cotton, which will give 875 pounds of cotton seed, which, according to my analysis, recently finished, and sent you by last steamer, will yield 35 pounds of ashes; these 35 pounds of ashes contain 12 pounds of phosphoric acid, 10 of potash and common salt, while the remaining parts are composed of lime, magnesia, &c. The most common application of cotton seed as manure, has been on the small grain crops, for which they are admirably adapted—containing as they do all the constituents necessary for the nourishment of these crops. It seldom occurs that wheat is planted after cotton, consequently, the soil which produced the cotton seed does not receive them again, and we have 12 pounds of phosphoric acid, taken directly from this soil, which will, probably, not be sown in wheat, till the following season, when, perchance, it may receive the seed grown upon it. It is customary after cotton, to cultivate a crop of Indian corn, which is followed by small grain, in what has heretofore been the planter's system of rotation. We see thus two crops, which are the most powerful exhausters, taken from the soil, before we return, directly, any of the constituents taken away in the form of cotton seed. To show, conclusively, the injudicious and impoverishing practice of cultivating cotton and Indian corn, as successive crops, I will cite the analysis of M. Boussingault, who says, that 100 pounds of the ashes of the grain of Indian corn, contain 50 pounds of phosphoric acid. Now, suppose that one acre planted in this crop will yield 30 bushels—which will be equivalent to 1350 pounds of corn. If these 1350 pounds of grain be reduced to ashes, we have a fraction over 97 pounds, which contain 50 pounds of phosphoric acid, and 30 pounds of soda and potash—making for the production of the two crops of cotton and corn, the enormous amount of 62 pounds of phosphoric acid, and 40 pounds of common salt and potash. Then, suppose, the third year, we sow wheat after corn. This crop requires about the same constituents as does the cotton crop. If we return to the soil the usual quantity of cotton seed devoted to this crop, we give it back only one-fifth part of the phosphoric acid, &c., which was taken from it in cultivating the two preceding crops. When such are the facts, what reliance can be placed in the generally received and popular practice of cultivating corn immediately after cotton? How long has it been argued, that such a system of rotation was beneficial to the soil? The reverse is the fact, for, in harvesting 1350 pounds of corn, we take a fraction over *four times* as much phosphoric acid, than we do in producing one bale of cotton. The three crops most extensively cultivated in South Carolina, are those which consume the most valuable constituents of the earth in their production, and our planters should at once be awakened to the necessity of remedying the evils, resulting from incorrect sys-

tems of culture, before it is too late. The first step, is to adopt a better system of manuring, and by the institution of economy in saving, preserve to the crops much that is lost to them, by reason of the non-application, or the more general want of knowledge, respecting the availability of many substances found on the farm.

As the greatest quantity of these constituents are found in animal bones, the easiest method of restoring them would be to carefully collect all these, and make them subservient to the wants of these crops by converting them into powder or ashes. Bones contain an immense amount of phosphoric acid. My far-famed preceptor, that world renowned chemist, LIEBIG, says, that *a single pound of bone-dust* contains as much phosphoric acid, as *one hundred pounds of wheat*. From this we can easily perceive, that there are bones wasted on every farm in the State, sufficient to manure the entire wheat crop. This, to many, will doubtless appear strange, but it is nevertheless true, and if we do not arouse ourselves to a better system of farming, we will find our State, in less than fifty years, in a more deplorable state of impoverishment than were the outworn lands of our sister State of Virginia, before the industrious farmers, who are now working such miracles on them, took hold of them for improvement. The first colonists of Virginia found a soil similar to our own. Abundant harvests of wheat, corn and tobacco, were obtained from one and the same field, for near a century, without the aid of manure. But nature, exhausted, at last refused to repay the laborious toil of the husbandman, and whole districts were suddenly converted into arid and unfruitful pasture lands, which, without manure, will now produce neither wheat nor tobacco, and the desolation of which is only heightened by the miserable herds and flocks, which find a scanty summer subsistence on these bleak wastes. This is not strange, when we state, that in the production of the standard crops, in the space of *one hundred years*, there was removed from *every acre*, fully 12,000 pounds of alkali in leaves, grain, and straw. It necessarily became unfruitful, because that small portion, which, during each succeeding year, was rendered soluble, was not sufficient to satisfy the natural demands of the plants. With such an example, why shall not South Carolina make the attempt to preserve her already impoverished fields from a similar fate? We possess over her many advantages, and still in many parts, aided by science and industry, she is renewing the bare bosom of mother earth, by a deep covering of mellow artificial soil, which sustains the rich gifts of Ceres. We possess, as a peculiar advantage over the Virginian farmer, a larger amount of forest to supply leaves and litter, to be converted by a little pains-taking into good manure; and, secondly, the amount of the constituents of the soil, exported in our cotton, does not come in the same fearful ratio, as they do in the Virginia products—small grain and tobacco. This is truly an important advantage; as we consume the cotton seed and small grain on our farms, very little is exported, and consequently, these self-same constituents are obtained again, in the voidure of such animals as are sustained on them, and their constituents are re-delivered to the soil, in the shape of manure, in as large quantities as they were originally taken from it, and when combined with vegetable substances, in the shape of composts, even in larger quantities, the application of which, results in the speedy and certain improvement of the land. But, to all these means, the farmer in South Carolina—where extent of acres is not measured by price—has a third means of remedying the evil of an improper succession of crops. This is fully demonstrated by LIEBIG, in the example which he cites in his Agricultural Chemistry, of the condition of the country around Naples, which is famed for its fruitful corn land. The humblest villages are situated from eighteen to twenty-four miles distant from each other, and between them there are no roads, and, consequently, no means for transporting manure to any distance from the residences of the laborers. Now, corn has been grown on these lands for thousands of years, without any portion of the constituents which have been annually removed from the soil being artificially restored to it. The method of culture, however, satisfactorily explains the cause of this wonderful and permanent fertility—and though the system appears a very bad one in the eyes of our agriculturists, it is, nevertheless, the very best that could be adopted. A field is only placed under tillage once in three years, and in the intervening two years furnishes a sparse pasturage for cattle and sheep. The soil undergoes no actual change in these two years, during which it thus lies fallow, farther than being exposed to the influence of the atmosphere, a fresh portion of the alkalis contained in it are again set free, and rendered soluble. The amount of constituents in two years, thus placed by nature at the disposal of the crop of one season, being generally greater than the crop demands, this patient system of rotation without alternation has preserved the fertility of the soil. It may appear to those who do not reflect, that the droppings of the animals pastured on the land might have an improving effect, but this is not the fact, for they yield the soil nothing which they did not drain from it. The grass and weeds, upon which they live, spring from the soil, and that which they return in voidings, must, according to the laws sustaining animated nature, be less in quantity than the amount originally derived by them. The fields, therefore, under this system of

grazing, can gain nothing; on the contrary, the soil must have lost some of its constituents. Experience, as in Virginia, has shown that wheat should not follow wheat, or tobacco a crop of tobacco; for these are crops which speedily exhaust the constituents of the soil. If we take these constituents from the soil, we should return them before we again tax it to ruinous production, by artificial manuring, with such manures as would most readily and cheaply effect the object, or, if this cannot be done, why, there is still a sufficiency of land unoccupied, untilled, and lying waste on every plantation to allow it to lie, at least, one year fallow. Why do not our planters do these things, and preserve the rising generation from raising the cry of "Westward Ho!" A country like South Carolina, possessing a climate suited to nearly all the cultivated crops, deserves to be fostered and improved. The present age must make the beginning, else we will entail the horrid curse of national poverty upon those who follow us. With the proper energies, and the application of the proper principles to her agriculture, we can make her the garden spot of the world—and such she should be. When I return home, I intend to devote myself to analysing every cultivated crop of South Carolina, and will feel sufficiently rewarded, if my labors only produce the result of stimulating *the beginning* of a reformation in the agriculture of my native and beloved State.

University of Giessen, Germany, April 16, 1848.

HORSEOLOGY.

SADDLES—*the importance of a good one—antiquity of—first woman's-saddle—hunting saddle described.* SPUR—*the use of by the ancients, and as used at present—preferable to the whip in racing.*—By Nimrod.

SADDLES and bridles form no unimportant feature in the equestrian art, as well as in the establishment of a sportsman. Nothing sets off the appearance of a horse and his rider more than a good saddle and bridle, nor does any thing contribute more to the comfort and safety of the latter than a well-made roomy saddle, with spring bars for the stirrup-leathers; stirrups rather heavy than otherwise, and sufficiently large for the feet. Some persons, not contented with the spring bars, require spring stirrups as well; but, in our opinion, no man can hang in a common stirrup, provided he do not wear thick boots nor use small stirrup-irons. Of the various sorts of bridles, the snaffle is most in use on the turf, and the curb for military horses, hunters, roadsters, and coach-horses. Not one hunter in twenty has a mouth good enough for a snaffle only; although there are a few horses in every hunt that will not face the curb. Some, however, go very well on the snaffle up to a certain period of a run, when all at once they require the assistance of the curb. Such horses should be ridden with a double bridle, so that the rider may have recourse to the curb-bit, when wanting.

There is often great nicety required in fitting a horse with a bridle, if irritable in his temper, or a very hard puller. If the former, he must have a bit of just sufficient severity to control him, and not any thing more. The one called the "Pelham," is well adapted to horses of this description, as it partakes of the double properties of snaffle and curb. With very hard pulling horses, the curb to a severe bit must be used; but the evil of this is, that, after a certain time, the mouth, thus acted upon, becomes "dead," as the term is, and the horse is unpleasant to ride and difficult to turn. To remedy this, three players should be attached to the port of the bit, which by hanging loosely over the tongue, keep the mouth alive. A bridle of this description, very long in the cheek, is known in the hunting world as the "Clipper bit," being the one in which that celebrated horseman, Mr. Lindow, rode a horse called the Clipper several years over Leicestershire, in which far-famed county he was supposed to be the best hunter going. If a horse rushes at his fences, a moderately tight nose-band is useful, as also to prevent his opening his mouth, and snatching at his rider's hand. The less a horse opens his mouth in his work the better, as it tends to make it dry; whereas it cannot be too moist for his own good. Bits very high in the port are of

course the most severe, owing to the increased purchase; but with every description of bits, care should be taken that they are sufficiently wide for the mouth, so as not to press against the horse's cheeks, and that the head-stall is sufficiently long to let the bit drop well into the mouth.

As we read in the 22d chapter of Genesis, 3d verse, that "Abraham rose up early in the morning, and *saddled* his ass," saddles of some sort must have been used in very early days; but few things appear more extraordinary to those persons who look into ancient history, than the fact of saddles *with stirrups* being a comparatively modern invention. Although a French translator* of Xenophon, by an oversight, makes a governor of Armenia hold the stirrup of the Persian king when he mounted his horse,—"Il lui tenoit *l'etrier* lorsqu'il montoit à cheval," it is well known that the ancients had no stirrups, but that men of rank among them were accompanied by a person whose office it was to lift them into the saddle, whom the Greeks called ἀναβολευς, and the Romans *strator*. There is no mention of stirrups in any Greek or Latin authors, no figure to be seen in any statue or monument, nor any word expressive of them to be met with in classical antiquity. In the celebrated equestrian statues of Trajan and Antoninus, the legs of the rider hang down without any support, whereas, had stirrups been used at that time, the artist would not have omitted them. Neither are they spoken of by Xenophon in his two books upon horsemanship, in which he gives directions for mounting; nor by Julius Pollux in his *Lexicon*, where all the other articles belonging to horse-furniture are spoken of. The Roman youth, indeed, were taught to vault into their saddles,

"Corpora saltu
Subjiciunt in equos;"†

and in their public ways, stones were erected, as in Greece also, for such as were incapable of doing so. As another substitute for stirrups, horses in some countries were taught to bend the knee, after the manner of beasts of burden of the East;‡ and in others, portable stools were used to assist persons in mounting. This gave birth to the barbarous practice of making captured princes and generals stoop down, that the conqueror might mount his horse from their backs; and in this ignominious manner was the Roman Emperor Valerian treated by the Persian king Sapor, who outraged humanity by his cruelty. The earliest indisputable mention of stirrups is by Eustathius, (the commentator of Homer,) about six hundred years back, who uses the word *stabia*.

Although the history of the saddle has not exercised the learned world so much as the antiquity of the stirrup, a good deal has been written and said about it. Like all other inventions, it appears to have been suggested by the necessity of making the rider sit easily upon his horse, and some kind of covering, consisting of cloth or leather, (skins or hides, perhaps,) was placed on the animal's back. These coverings, however, became afterwards extremely costly;§ they were made to hang down on each side of the horse, and were distinguished among the Greeks and Romans by various names. After they became common, however, it was esteemed more manly to ride without them; and thus we find Varro boasting of having ridden bare-backed when young. Xenophon also reproaches the Persians with having placed

* D'Ablancourt.

† Virgil, *Æneid* xii. 287.

‡ See Silicus Italicus, lib. x. 465,—

"Inde Inclinatus collum, submissus et armos
De more, inflexis præbebat scandere terga
Cruribus."

§ See Virgil, *Æneid* vii. 276; viii. 552; Ovid, *Metam.*, lib. viii. 33. Also Livy, lib. xxxi cap. 7, who speaks of a man who dressed his horse more elegantly than his wife.

as much clothes under their seats, on their horses' backs, as they had on their beds. It is certain that no coverings to the horses' backs were for a long time used in war; and, according to Cæsar, the old German soldiers despised the cavalry of his country for having recourse to such luxuries. In the time of Alexander Severus, the Roman soldiers rode upon very costly coverings, excepting at reviews, when they were dispensed with, to show the condition of their horses. But we should imagine we must look to later times for the costly trappings of the horse. In his description of the city of Constantinople, the author of the *Letters of the Turkish Spy* says, "the next thing worthy of observation is the Serayan, or house of equipages, where are all sorts of trappings for horses, especially saddles of immense cost and admirable workmanship. There cannot be a more agreeable sight, to such as take pleasure in horses and riding, than to see four thousand men here daily at work in their shops, each striving to excel the rest in the curiosity of his artifice. You shall see one busy in spangling a saddle with great Oriental pearls and unions intermixed, for some Arabian horse, belonging, perhaps, to the Vizier Azem; another fitting a curb or bit of the purest gold to a bridle of the most precious Russian leather. Some adorn their trappings with choice Phrygian work; others with diamonds, rubies, and the most costly jewels of the east."

But to return to the history of the saddle, its invention, and general use, the latter a point very difficult to be ascertained. The word *ephippium*, by which the ancient Romans expressed it, being merely derived from the Greek words ἐπὶ, *upon*, and ἵππος, *a horse*, leads us to conclude that, by degrees, the covering spoken of was converted into a saddle. The Greek word ἕδρα, used by ancient authors, is believed to have been to express a saddle, and is more than once used by Xenophon, in his *De Re Equestri;* and Vegetius, who wrote on the veterinary art nearly 400 years B. C., speaks of the saddle-tree. Perhaps the clearest proof of the use of any thing approaching to the form of the modern saddle, is the order of Theodosius, (see his Code,) in the year 385, by which such persons as rode post-horses in their journeys were forbidden to use those which weighed more than sixty pounds; if heavier, they were ordered to be cut to pieces. What would the people of those times have thought if they could have seen one of our Newmarket racing saddles, weighing under four pounds, but giving the rider a very comfortable seat? The order here alluded to, doubtless applied to something resembling a saddle, although of rude workmanship, as its weight bespeaks. Every traveller, we may conclude, was provided with his own saddle; and about this time the Latin word *sella* more frequently occurs. In the fifth century, again, we find articles bearing something of this stamp, and made so extravagantly magnificent as to call forth a prohibition by the Emperor Leo I., against any one ornamenting them with pearls or precious stones. The saddle-tree is also mentioned by Sidonius Apollinaris, a Christian writer, who was born, A. D. 430; and in the sixth century, the saddles of the cavalry, according to Mauritius, who wrote on the military art, had large coverings of fur; and about this period the Greek word σελα (*sella*) is used. It is considered probable, however, that the merit of the invention of saddles may be due to Persia, not merely from the circumstance of Xenophon's mentioning the people of that country as being the first to render the seat on the horse more convenient and easy, by placing more covering on their backs than was common in other parts, but also because the horses of Persia were made choice of for saddle-horses in preference to any others. That the word saddle is derived from the Latin word *sedeo*, to sit, may fairly be presumed. That the proper saddle itself, however, was unknown in England until the reign of Henry VII., we have good reason to believe; and in Ireland, from

the absence of any representation of it on their coins, it may be conjectured, not till many years subsequent to that period. The woman's saddle, called by us the side-saddle, first appeared in Richard the Second's time, when his queen rode upon one; but from the pictures of men and women's saddles used in England's early days, we find they were miserable apologies for our modern saddles. Indeed, at the present time, Great Britain is the only country in which proper saddles are made. Hunting saddles should have their pannels well beaten and brushed to prevent sore backs; and no sportsman, even if light, should use a short saddle—*i. e.*, under sixteen inches from pummel to cantle.

The antiquity of the spur does not appear to have much excited curiosity; but the use of this instrument was known in the very earliest age of which we have any satisfactory history. At least we may presume that it was so, from the Hebrew word signifying horseman, (*Pavash,*) appearing to be derived from a Hebrew root signifying to *prick* or *spur.* So at least says Buxtorff; and he adds, that the horseman, or spurrer, was so called on this account: *Eques quod equum calcaribus pungat;* and he quotes Eben Ezra in confirmation of his opinion: *A calcaribus quæ sunt in pedibus ejus.* Spurs occur but seldom on seals, or other antiques, in the eleventh century, but in the thirteenth they are more frequent. As it is necessary that a horse should obey the leg as well as the hand, all military and parade horses are ridden in spurs; and, as we have already said, they are very useful to the sportsman in riding across a country, particularly in the act of opening gates; also all race-horses that will bear them are ridden with them, because, should punishment be wanting in a race, it is more easily inflicted by the heel than by the hand; add to which, these horses not only require the jockey's two hands at the same time, but are apt to swerve, or shut up, if struck severely by the whip.

PONY—*remarkable improvement upon by attention—its exemption from lameness in the feet—its great powers of endurance.*

A horse is called a pony when under the height of thirteen hands, four inches to the hand. It is difficult to account for this diminutive breed, unless we believe it to have been imported from countries farther north than Great Britain, which appears probable from the fact of ponies being found in greater abundance in Scotland and Wales than in any other part of the island; the effect, no doubt, of climate. In Ireland they are very rare.

There is no animal that improves in form and character so much as the pony does from the effect of good grooming and high keep. A real Welsh mountain pony, in very good condition, especially if not castrated, is a perfect war-horse in miniature, uniting almost every good property his species possesses. As a proof of one essential quality, we can state upon authority, that the Earl of Oxford had a mare pony, got by the Clive Arabian, her dam by the same horse, out of a Welsh mare pony, which could beat any of his racers four miles at a feather weight. Ponies, too, have properties which should attract the notice of the hippopathologist, among the most prominent of which are the following: They are never lame in the feet, or become roarers. A broken-winded pony is a very rare sight, and they live to the extreme of old age, if not unfairly treated. They are also very little susceptible of disease, in comparison with other horses; while their powers of endurance stagger belief. A rare instance of the latter excellence is furnished by the pony, Sir Teddy, only twelve hands high, accompanying the royal mail from London to Exeter, and arriving in that city fifty-nine minutes before it—distance 172 miles, in twenty-three hours and twenty minutes! It may scarcely be necessary to state, that he carried no weight, being led between two horses all the way; nevertheless, it was a task that we think

no full-grown horse would have performed. A correct likeness of this pony was painted by the elder Marshall, of Newmarket. In 1784, a Shetland pony, eleven hands and a half high, carried a rider, weighing five stones, from Norwich to Yarmouth, and back, forty-four miles, in three hours and forty-five minutes. As a proof, also, of their powers in crossing a country, the fact may be stated of the late Sir Charles Turner riding a pony ten miles in forty-seven minutes, and taking thirty leaps in his course, for a wager of 1000 guineas with the late Duke of Queensberry, then Earl March. During the drawing of the Irish lottery, the expresses from Holyhead to London were chiefly conveyed by ponies, at the rate of nearly twenty miles in the hour.

The only bad use to which the pony is applied, is in what is called the "pony chaise," or phaeton. The carriage itself is dangerous, by reason of its extreme lightness and shortness, by which it is so easily overturned; and the lowness of the driver's seat prevents proper command over the animal drawing it. It is too often the case, also, that "the pony" is a pet, and for that reason pampered in the stable and not much worked. On the least alarm, then, such as any unusual noise, horses galloping past him, or—and there have been too many fatal instances from this cause—some part of the fore-carriage touching his hocks in descending a hill, away he goes, galloping and kicking until he has rid himself of his load. The safest way of using ponies in harness, is in pairs, in double harness, with the poll of the carriage raised at the futchels, to prevent their kicking over it in their play.

The personal appearance of a Racing Jockey.

Previously to describing the proper seat of the jockey, we will now endeavour to exhibit him in the most likely form to acquire that seat. In height he should be about five feet five inches. We are aware there are several excellent jockeys under this standard; but they do not look so well on their horses, neither can they be so firm in their seat from want of a better clip, which the firm grasp of a longer thigh gives them. He should be rather long in the fork for his height, with low shoulders, rather long arms, moderate length of neck, small head, and a very quick eye. He should be of a naturally spare habit, to save the expense to his constitution by wasting; but he should have as much muscle in his arms and thighs, as his diminutive form will admit of; in short, to ride some horses at such very light weights, he should be a little Hercules. But there must be nothing like rigidity in his frame. On the contrary, there should be a great degree of pliability about his arms, shoulders, and back-bone, to enable him to be in perfect unison with his horse. He should have very free use of his hands, so as to change his reins from one to the other in a race, and to whip with the left, as well as with the right, when occasion requires it; he should possess much command of temper; and, lastly, he should have the abstinence of a Brahmin.

HILL-SIDE PLOUGH AND PLOUGHING.

HONOR DUE TO IMPROVERS OF AGRICULTURAL MACHINERY.

Among the highest obligations of agriculture, are those which it owes to men eminent in other arts and sciences, though many of them have proved to be any thing but *money makers*, as practical farmers. The fact is that the minds of such men are generally so thirsty for *knowledge*, and so much absorbed in the pursuit of it—that filthy lucre is the last thing they think of. Such men too are apt to be the least esteemed and honored in countries like ours, where universal worship of the "almighty dollar" is the universal sentiment. Hence the discoverer of a great truth in mathematical or physical science, or the inventor of a great contrivance to save time and labor, in farming is looked on while alive as a great bugbear or bore; and when dead

is too apt to be stowed away in the memory of survivors and posterity, as so much useless old lumber is stowed away in a garret. Ask one half of the little great men of our own day, ay even practical farmers, who grow rich by a sort of instinct for accumulation,—ask them who was the inventor of the *hill-side plough*, or of the *revolving horse-rake*, and it is ten to one they cannot tell you the name of the authors of these everlasting benefactions to their own pursuit. Perfectly willing are such men to gather and consume the precious fruit, without the least sentiment of care or respect for him who planted the tree! Be it then a part of our duty, while we live, to denounce such derelictions on the part of those for whose character as a body, as well as for their success as individuals, we cannot repress an honest solicitude.

Ask these same men, and they can chronicle with exactness the names of the *heroes*, and the fields, in which men have gained distinction and victory in political and bloody wars. Be it then, we repeat, the more especially, the duty of Agricultural Editors, to hold up as worthy of infinitely higher honor, the names and the memory of such men as THOMAS MANN RANDOLPH and PENNOCK—the inventors, the one of the hill-side plough, and the other of the revolving horse-rake. Governor Randolph married the daughter of Mr. Jefferson, a lady of rare accomplishments; mother of THOMAS JEFFERSON RANDOLPH, of Albemarle, a very zealous and enlightened farmer, and of Mrs. TRIST, the wife of our late successful and ill-used Minister to Mexico—who, if a little more contumacious, would have been sent home in irons, for concluding a treaty which, good or bad, was approved by the Executive and ratified by the Senate. But let us thank God that the flow of blood has been checked on any terms, and that now the sword *might* and *ought* to be turned into the pruning-hook and so for ever remain—for it is *only* as they affect the great pursuit, over which we are standing as one of the humblest of its sentinels, that we shall ever venture to refer or allude to political events. All wars are repugnant to, and inconsistent with that high degree of civilization, which belongs to the most improved state of the art of cultivation.

Monticello, March 6, 1816.

DEAR SIR—I have to thank you for the copy of your discourse on agriculture which you have been so kind as to send me. I participate in all your love for the art. We are indebted to you for much of our knowledge as to the use of the plaster, which is become a principal article of our improvements, no soil profiting more from it than that of the country around this place. The return of peace will enable us now to resume its use. My son-in-law, Colonel Randolph, is perhaps the best farmer of the state; and by the introduction of the horizontal method of ploughing, instead of straight furrows, has really saved this hilly country. It was running off into the valleys with every rain; but by this process we now scarcely lose an ounce of our soil.

A rafter level traces a horizontal line around the curve of the hill or valley, at distances of 30 or 40 yards, which is followed by the plough; and by these guide-lines the ploughman finishes the interval by his eye, throwing the earth into beds of six feet wide, with large water furrows between them. When more rain falls than can be instantly absorbed, the horizontal furrows retain the surplus until it is all soaked up, scarcely a drop ever reaching the valley below. Some two or three years ago, I mentioned to Mr. Peale this method of ploughing, and I think he has informed me of his having since practised it with satisfaction. It is probable therefore you may have heard of it from him, if not through some other channel.

Mr. Randolph has contrived also, for our steepest hill-sides, a simple plough which throws the furrows always down-hill. It is made with two wings welded to the same bar, with their planes at a right-angle to each other. The point and the heel of the bar are formed into pivots, and the bar becomes an axis, by turning which, either wing may be laid on the ground, and the other then standing vertically, acts as a mould-board. The right-angle between them, however, is filled with a sloping piece of wood, leaving only a cutting margin of each wing naked, and aiding in the office of raising the sod gradually, while the declivity of the hill facilitates its falling over. The change of the position of the share at the end of each furrow is effected in a moment by withdrawing and replacing a pin. The little paper model enclosed may help out my description of the share.

THOMAS JEFFERSON.

WHAT IS MESLIN, OR MESLING?

STORY ABOUT AN OLD BOOK.

LAUGH not, reader at this question—for if you cannot answer it, it would ill become you to laugh; and if you can, it is more than a certain club of distinguished agriculturists could do, with whom we had the honor, and the great pleasure to dine, some time since, not a thousand miles from the "*Athens of America.*" Shall we tell you how the question arose? Well, to begin at the beginning, we had been for some years inquiring far and near, for an old work which had been respectfully mentioned, we believe by Mr. Webster, on the Field-Husbandry of New England. Lately again, being in Boston, and rummaging about in the "**Antique Book Store,**" the proprietor said he had succeeded in finding it, and accordingly produced an old, smoke-dried volume of one hundred and sixty-six pages, for which he had the conscience to ask (and we were glad to pay even that to get it) **$2**, saying, he could as easily get **$5** as **$2**, from any one who would give *any thing* for it. Feeling inwardly the truth of his remark, we seized the long looked-for tract, which beareth the following title and brief sketch of the author:—

Essays upon Field-Husbandry in New-England, as it is or may be ordered. By JARED ELIOT, M. A. Eccles. v. 9. ¶ *Moreover, the profit of the Earth, is for all; the King himself is served by the Field.* Boston: Printed and Sold by *Edes* and *Gill*, in *Queen Street*. 1760.

The respectable author of this treatise, was the son of Rev. Joseph Eliot, of Guilford, (Conn.,) who was the second son of the celebrated *John Eliot*, of Roxbury, apostle to the *Indians*. *Jared Eliot* was Pastor of the church at Killingworths, (Conn.) He was born November 6, 1685; graduated at Yale College 1706; died 1763. His agricultural essays have passed through several editions.

Considering the circumstances, and the condition of our country at the time, more than a hundred years ago, that no agricultural societies had been formed, and no instruction attempted upon the great subject of Husbandry, to the author of this work may fairly be conceded claims to grateful and honorable remembrance far beyond such as are awarded to men of less usefulness and more pretensions. Some of the best habits of New England Husbandry may still be traced to the rules laid down, and the information imparted by the author. It may be said, that Tull and Eliot were, in their day and countries respectively, what Sinclair and Ruffin have been in more modern times; and what measure of honor is too great for men who distinguish themselves as benefactors of a pursuit, which the wisest men of ancient and of modern times have regarded as the first in rank, of all human employments?

Socrates makes this noble encomium on agriculture:—"It is," says he, "an employment the most worthy of the application of man, the most ancient and the most suitable to his nature; it is the common nurse of all persons, in every age and condition of life; it is the source of health, strength, plenty, riches, and of a thousand sober delights and honest pleasures; it is the mistress and school of sobriety, temperance, justice, religion, and in short, of all virtues, both civil and military."

To return to our author, and to the question, *what is mesling?*

We had read, in the morning, the following quaint passage: "I perswaded one of my Neighbours to make trial of this Method of sowing *Mesling* this last sowing season." Not knowing what mesling was, and supposing it to be some kind of grain or crop, we were honored that day with an invitation exactly to our taste, to meet some certain members of the ancient and honorable agricultural society of ———, who had been in the

habit, for many years, of dining together, at a certain place, on a given day of every month—with but one rule for the caterer of the day, and that is, to have on the table the *best leg of mutton* to be had that day in the market—and truly a noble leg of mutton it was. Nor was it washed down, as the reader would imagine would be the case in that land of "steady habits," with water alone! for if wit sparkled around, something else sparkled "on the board."

He, by the by, who lives some degrees nearer the equator, is deceived or deceives himself, if he believes that these "Yankees" are *always cool and calculating*. In their counting-houses or on 'change, they are *business men*—quick, but systematic—cool, but upright. For a matter of right and principle, stickling for the ninth part of a hair; but in matters of public spirit that require forecast to discern how the thing will work, and when approved, liberality and energy to carry it out, it is hard to say whether they have been best fitted by climate or education. Look at their churches, from the spires of which you can telegraph with a pocket-handkerchief from one to another, all over the country, east, west, north and south! Look at their railroads, webbing the country in all directions; and their noble colleges and schools without number, all growing out of that sagacity which has taught them to facilitate the union of capital for the employment of labor, whereby labor is kept at home and rewarded, and capital is kept at home and accumulates, and men get rich at home, instead of flying to the frontiers to drive back the miserable savage and the howling wolf, while they take their place to subdue the wilderness or starve. Even their ice-ponds are melted into gold; but if they have ice to be melted, they have hearts as well; for if they know how to make, they know, too, *how to give!* Go to one of these rich "Yankees," and tell him, sir, we want to encourage a taste for horticulture, and to build a floral temple that shall do honor to our city, and he does not tell you to "call again, when the subscription comes down to $2," or a "single copy"—not he—but he just quietly opens his book, and fills up a check for a cool $1000, and turns again to his business; and when his affairs are despatched, he calls and *takes* the stranger to look at all that is worthy of regard around the city. Such is the disposition, and thus is acquired the ability, to be courteous and hospitable, where men encourage domestic industry, and make it the interest of the consumer to eat the food, and the manufacturer to fashion the raw material here in our own country; to place, in a word, the loom and the anvil, as we represent they should be, close to, and next to, and subordinate only to the plough. But we have forgotten—let us back to our leg of mutton dinner-party.

Suffice it to say, that to us it was a rare enjoyment to find ourselves in the midst of gentlemen—quiet, intelligent, hospitable, and habitually addicted to inquiries and tastes at once so virtuous and so useful. Agriculture and horticulture being the principal themes of conversation, we mentioned the good luck we had had in finding a copy of the "Essays," and took the opportunity of being relieved, as we hoped, of our doubts as to—*What is Mesling?** But, tell it not in Gath—publish it not on the housetops, what was our surprise to find, that we were not alone in our ignorance—for, not a member of the Agricultural Society of ———, present, could tell; various were the conjectures, but all were as wild and as wide of the mark as some of them were curious and laughable. All this may seem ridiculous to him

* In his edition of the Farmer's Cyclopedia, we now find, for we have just got command of our library, Dr. Emerson defines *Meslin* thus:—"A term applied in New England to the crop of peas and oats when sown together. *Meslin corn*, a term applied to wheat and rye produced in a state of mixture."

who knows all about it, as the most abstruse and *undivinable* thing seems plain enough when explained. Meslin or mesling, then, it will be seen from what follows, meant a *mixed crop* of different grains sowed together, and to be reaped together, and ground and fed together—and on reflection, we have no doubt the word is a corruption of the French word melânge—which means a medley or mixture. In the old French it was spelled meslange—hence, meslin or mesling. The custom which then prevailed in New England still prevails in the neighborhood of Lebanon, New York, where we remember Mr. Hall, the model farmer of the neighborhood, sowed oats and barley in the same field, to be gathered and ground together for his hogs. We are not aware that this practice has extended to the south, nor prepared to say, whether it might or might not be done to advantage; but in reading Mr. Colman's report, we came across the following, which at once revealed the meaning of *meslin*. We invite to it the attention of our friends when next they meet over their best leg of mutton to be had in ———, and *may we be there to partake of it.* The extract is given in full, to show the southern reader the New England estimate of the expense of *cultivating a crop of oats*—$10 50 per acre. On this, certain reflections suggest themselves. New England estimates approach much more nearly to *facts* than they do in the south—for example: when they say, ploughing an acre for oats—$2; sowing oats and dragging in, $1—they mean that for these operations they have to pay these sums down in cash, when the work is done; or what is the same thing, that for the same amount of labor they can command these amounts in money. In the south, such exact calculations are not practicable, and if practicable are rarely attempted. The possession of the force with which the work is to be done, and which is to be supported any how, whether employed or idle, renders such calculations any thing but habitual or exactly practicable; and might we not ask the oat-grower of the south or even of New York, what would become of him if he had to pay for them $10 25, or their equivalent, per acre? In New York, the average of oats is twenty-six bushels per acre, or less than $9 at 33⅓ cents per bushel per acre. And after all, it is well worthy of inquiry, whether, if they could make the exact calculation, and dare look the facts in the face, they do not actually cost them also $10 25 per acre in most of the states, while the crop does not net $8 per acre in the market; and whether it be not this wilful neglect of arithmetical calculation—this fear of looking the truth in the face, which is secretly and unceasingly gnawing like a worm at the root, and undermining the independence of old families, impoverishing the father, and driving away the son to the far west, as men naturally stand from under falling trees.* Rely on it, reader, it behoves you to ponder these questions, and to bethink yourself, whether it is not only where the moneyed and social institutions of a state have a tendency to keep people at home, and to promote increase and condensation of population; to draw together the plough, the loom, and the anvil—the miller, the tanner, the shoemaker, and the schoolmaster, the hatter, the carpenter, the wheelwright, the bricklayer, and the butcher; whether it be not in such states and such communities only, that farmers *can afford* to pay $10 50 for sowing and harvesting *an acre of oats*, for there only can they improve their lands to average

* Will some gentleman have the goodness to send us, if to be had, the address of Mr. Bruce, one of the largest slave-holders in Virginia, to an agricultural society in one of the lower counties, wherein he enters, as we have been told, upon a calculation to ascertain the real bonâ fide cost and profit of *slave* labor. When men begin to shy the truth, and avoid strict inquiry into their own condition, for fear of being led to unwelcome results, they may be assured that they are standing on a slippery foundation.

thirty-five bushels to the acre; then only can they command fifty cents a bushel for the grain, and $7 an acre for the straw on the spot!

Pease and Oats or Meslin.—The prevailing custom among the Deerfield farmers is to sow pease and oats together, so as that the crop shall be in the proportion of one quarter pease to three quarters of oats. The pea customarily sowed in these cases is a green pea from Canada, which ripens about the time of the oats, and for which, while growing, the oats act as supporters. Pease and oats are usually ground together as feed for their fatting cattle, and are deemed valuable, though not so good or so much relished as Indian meal without mixture.

I have only two estimates of the cost of cultivating oats, and these where they come in in the rotation the year after the corn.

Expense of cultivating an acre of Oats.

Ploughing,	2 00
Sowing oats and dragging,	1 00
3 bushels seed,	1 50
Gathering,	4 00
Threshing,	1 75
	$10 25

Return.

Straw, more than one ton,	7 00
35 bushels oats at 50 cents,	17 50
	$24 50
Balance in favor of the oats,	$14 25

Another farmer gives the following account of a mixed crop of wheat and oats in the proportion of half a bushel of wheat with two bushels of oats. This is thought to make an excellent feed for animals. Some of the human family have no absolute distaste for it.

Ploughing,	2 34
Seed, half bs. wheat, $1 00; seed, two bs. oats, $1 00,	2 00
Sowing and harrowing,	50
10 lbs. clover,	1 00
Cradling, $1 50; threshing by flail, $2 00,	3 50
	$9 34

Return.

Straw,	3 00
35 bushels at 75 cents,	26 25
	$29 25
Balance in favor of the crop,	$19 91

A New Carriage.—The Worcester Telegraph describes a new two-wheeled carriage, called a "Woosteree," recently invented and patented by Mr. Isaac Woodcock, of Worcester:—

"The advantages which it possesses over a common built carriage, consist in the compact combination of a chaise or buggy-body, with an axle, pair of shafts, and half-elliptic springs, so arranged that the entire weight of the body and its load is suspended to the axle, neither resting upon or fatiguing the horse, and so also that the motion of the body of the vehicle is kept perfectly steady, and is prevented from violent jerks or vibrations, however rough or uneven the road may be. It is also constructed so as to pass the weight *under* the axle, instead of *over*, as in the old way. Its balance on level ground, bears upon the horse in *ascending*, and relieves him of the weight in *descending* a hill."

Prolific Duck.—Mr. James Howard, farmer of Sollom, has a duck that lately sat upon twenty-one eggs, from which she brought out twenty ducklings, eighteen of which are now living. Seven days after she had hatched she commenced laying again. She is half-bred between the wild duck and the tame.

DESTRUCTION OF THE PINE FORESTS OF NORTH CAROLINA.

CAUSE OF AND REMEDY SUGGESTED, FOUNDED ON MUCH OBSERVATION AND EXPERIENCE.

We find the following in "*The County Shield*," published at Snow-Hill, Maryland. We unite in the confidence expressed by the Editor in the intelligence and *reliability* of the writer, but if Forests are not to be worked in May, June, July, and August, when can they be? Is it not in these months that the rosin is extracted?

The death of the trees is caused by boxing, chipping, bleeding or felling them in any part of the forest, where the injured tree can touch any of the uninfected, in the months of May, June, July, and August. In these months Pine Forests should never be worked in. At this period a most fatal insect called the "Fire Fly" is attracted by the fresh oozings or exudations, from the newly cut tree, and deposits a large quantity of eggs, which in time hatch out numerous and most destructive white worms with black heads, that soon commence their ravages, and never cease till they completely destroy the sap part of the tree, or until frost overtakes them, and puts an end to their labors.

The "fire fly" is very small, and can use its wings only with great difficulty. It flies slowly, and cannot go far, unless it is enabled to slip along slantingly, or if I may so express myself, on an "inclined plane." Therefore the only method of ridding a piece of woods of this insidious foe, is to fell all the trees that have been inoculated by it, [which are generally those in the immediate vicinity,] in such a manner that they will not touch any other tree that remains uninjured. Or, if there should be several acres of diseased trees, it is only necessary to cut those trees down, that are on the out-skirts of the diseased timber, or such as are bordering on, or near those that remain green and uninjured; but they must not be felled so as to touch the green uninjured tree,—to do which would be like throwing a fire-brand in a sedge field.

If this plan is pursued, the fly can be destroyed in a very short time, but if suffered to remain, they will soon increase and inoculate a whole forest. They seem to be generated by the fresh sap or juice of the pine, in the months named; as I have never seen them or heard of their being present, except at such times and places as are mentioned. The worm produced by them is very rapid and vigorous in its operations, and may be heard distinctly, whilst boring its way into the tree, upon which it has fastened itself,—this is however more particularly observable on the tree that has been felled for a few days. It is supposed these worms finally form a Chrysalis and reproduce the "fire fly."

I have had much experience in this matter in the course of my life, and am quite well satisfied that the recent destruction of turpentine trees in the Carolinas, proceeds from no other cause than the "fire fly." If you think these hasty suggestions will reach and benefit any who are suffering from this curse, you are welcome to publish them.

Yours, &c., PARKER SELBY.

Poplar Grove, near Snow-Hill, Maryland, June 28, 1848.

We are personally acquainted with the author of the above article, and know him to be a man of much intelligence, close observation and great experience. He is now in his 74th year, and any thing he would suggest upon such a subject would be practical, and would possess the merit of having been tried. The foregoing may be relied on in good faith, and we trust it may "reach and benefit" those who are suffering from the effects of the "fire fly."—*Ed. Shield.*

THE NEW YORK ANNUAL STATE FAIR,

UNDER the auspices of the State Agricultural Society, will take place at Buffalo, on the 5th, 6th and 7th days of September next, and the chances are that, in the number of people and of things exhibited for premium and for sale, it will exceed any of its predecessors.

We observe that Mr. Sherwood, who has been President of the society, and who is, therefore, *ex-officio* member of the executive committee; and Mr. Allen, who has been of the executive committee, and, being now the President of the society, will remain, *ex-officio*, member of the executive committee, both advertise large herds and flocks of cattle and sheep for sale at the Fair. Their position and judgment offer assurance of "good things."

We are not aware of the difference, but observe that Mr. Allen advertises "*about* 30 *thorough-bred short horns*," "*also* 30 *thorough-bred Durhams* of like description." True there may be cattle from the County of Durham, that are not "thorough-bred short horns," but we were not aware that any such had been imported.

The "improved short horn" we had taken to be the designation for the highest bred cattle of that race.

The exhibition will doubtless well repay the time required for the trip. The railroad will, it is presumed, carry to and fro all animals strictly and properly intended to be *exhibited for premium*, and all implements carried there for the same purpose; but all the friends of the society and the cause are bound in honor to prevent, as far as they can, all imposition from being practised in attempts to take advantages of the liberality of the company, to get things transported under pretence of exhibition for premium, which are really and truly designed to be exhibited for sale, without any chance of a prize, or any excellence to entitle them to one. All abuses of that sort have a tendency to bring about a forfeiture of the privilege, and to make the innocent suffer for those, if any, who would meanly take advantages.

P. S. It is to be hoped the society has dispensed with *oaths* to prove the truth of statements by competitors for crops. Could a more degrading stigma be cast on any class of people, or be sanctioned by higher authority? and besides, are not men as apt to make false statements about horses, and cattle, and sheep, as about crops! One would suppose that in a community of honorable men, such as any man would feel it safe to live in, the infamy that would follow a false or even equivocal statement, would be so inevitable and so everlasting, that as a matter of cold, mean, selfish calculation, to say nothing of the instinct of honor, no man would run "the hazard of the die."

CHESHIRE CHEESE.

For quantity and quality, Cheshire is said to go ahead of any county in England, in the production of cheese. The fame of it goes back at least to the reign of Henry I. in 1100, when the Countess Constance, though the wife of the king's cousin, kept a herd of milch cattle, and was celebrated for her cheese.

In our early numbers, we shall give an essay with all the details of Cheshire cheese-making, so full and satisfactory, that the Royal Agricultural Society awarded their prize to the author, Henry White, land-agent and surveyor. In the mean time, we take from it the following recipe—TO CURE THE MAW-SKINS, OR STOMACHS OF SUCKING CALVES, FOR MAKING RENNET.

Procure the skins fresh from the butcher the year previous to their being wanted; clean out the chyle matter, and every other apparent impurity; the inside is then turned outward on a table, and salted; the skins are then laid, one upon another, with a layer of salt between each, in a deep earthenware vessel, similar to a cream-mug; they are then covered over with salt, and have a lid of slate or flag placed on the top. They are taken out as wanted, about a month previous to being used, and the brine drained from them. They are then spread on a table, and fine salt is powdered on each side. In this state, they are rolled with a paste roller, distended with a splint of wood, and hung up to dry.

Cheese-making is another branch of husbandry which will inevitably make its way into the fine grazing regions in the mountain portions of Maryland, Virginia, the Carolinas, Tennessee, and Kentucky, to be again, in a measure, superseded by butter, when these mountains shall have been penetrated by railroads.

THE WATER OF SPRINGS AND RIVERS.

"ALL these waters," observes Professor Johnston, "contain a sensible, and in many of them large proportion of silica, in a state of solution; all, therefore, are capable of more or less fully supplying this food of plants. As a general rule it may be stated that the value of a water for the purposes of the irrigator, depend, first, upon the *quantity*, and, secondly, upon the *quality* of the solid matters it contains. As regards both these properties, the sewage waters of large towns combine them for the purposes of irrigation in the largest proportion." "The quality of irrigation water," remarks Mr. J. E. Dennison, when describing the valuable water meadows formed by the Duke of Portland, at Clipstone, (*Jour. R. A. S.*, vol. i., p. 362,) "is very important. Soft water is the best, mineral water, and water from peat mosses and bogs are found to be injurious. After strong rains, the washings of streets and sewers of the town of Mansfield, which discharge themselves into the Mann, give great additional efficacy to the water. It will sometimes deposit a sediment in one watering, of the thickness of a sheet of paper." "To place the agricultural value of the at present wasted sewer water in another point of view, I have ascertained," observed Mr. Smith of Deanston, (*Report Town's Comm., Par. paper* 11, p. 328,) "that the quantity of sewer water due to a town of 50,000 inhabitants, amounts to about 1,190,080,946 gallons per annum; which quantity will yield an annual application of 17,920 gallons to an extent of 66,410 acres. Taking a general view of the subject, we may assume a clear revenue from the sewer water* of all towns at £1 from each inhabitant."

IMPROVED STOCK.

WE know of no case in which a want of liberality and public spirit is so glaringly and universally evinced, as in the failure, by the agricultural community, to give any thing like fair support to those who have incurred great expenditure both of care and money, in importing and keeping the most improved breeds of domestic animals. This has been, we were going to say, shamefully exemplified, in what we have witnessed in regard to the improved short horn, as we will take some early opportunity to illustrate and dwell upon. Were this the result of experience, proving that race to be devoid of the merits ascribed to them, no one would have a right to complain—but that is not the fact. If it were, how does it happen that they command the prices they do in England, where their excellence in various important points has been maintained, as have the high prices they fetch, for half a century? Of this, too, we will give some recent proofs.

Of the improved short horns, the largest and best herd probably in this county, certainly on this side of the mountains, is that of Mr. Vail, near Troy, N. Y. To the fine animals, descended from, and connected with the best stock in England, already on his estate, he has lately added the choice animals which were reserved by Mr. Prentice for his own use, on the occasion of his large sale near Albany. Thus will Mr. Vail be enabled to answer the demands of those who desire to go at once to the fountain-head for what is

* Our attention was called last summer to a very remarkable instance of the quantity of extraneous matter contained in running water. The stream of a mill, which belonged to the then postmaster of New Market, Virginia, (since dead,) had, in a remarkably short time, deposited, in passing over the wheel, so much lime or marl, that the wheel was perfectly incrusted, and large flakes might be taken off which incased the arms of the wheel, as if it had been done with sheet-iron. It was his custom to let off the water from the pond, occasionally, and to cast out the sediment which had been left at the bottom of it, to fertilize adjacent fields.—Eds. P., L. & A.

pure. We hope to have an early opportunity of inspecting his herd, that we may be better enabled to answer the inquiries of the curious, and to fill the orders of persons wishing to buy. In the mean time we would earnestly recommend all persons having choice stock, and any thing else that is excellent of its kind, and that farmers are likely to need, to advertise it on the cover of the Plough, the Loom, and the Anvil. None other will be advertised, nor would any other justify the expense of advertising in this journal; and this not from any self-interest, for we have placed ourselves beyond that suspicion, having surrendered the use of the advertising sheets to the publishers of this work.

STATISTICS OF ENGLISH LAND, AND ITS PRODUCE.

THERE must often be occasion for those whose agricultural inquiries extend beyond their own horizon, to be familiar with, or, at least, to have the means at hand to refer to the facts stated below.

If, in all our states, farmers were as attentive as their representatives are unmindful of their true and substantial interests, in lieu of the hundreds of thousands expended for surveying far distant possessions for military ends, we should have surveys of all the resources that exist in, and that might be developed and applied to the old states.

The necessity for, and natural advantage of obtaining more accurate information upon the statistics of agriculture, is a rapidly spreading conviction. In the absence of more complete returns, we have collected the following tables, constructed from recent calculations and inquiries. From these we find that the number of square miles, acres, parishes, inhabited houses, population per square mile, and acres to each person, and the number of persons to a house, in England and Wales, are as follow: (*McCulloch's Brit. Em.*, vol. i. p. 401.)

	England.	Wales.
Square miles,	50,387	7,425
Statute acres,	32,247,680	4,752,000
Parishes,	9,942	838
Population,	14,995,138	911,603
Population per square mile,	297,599	122,774
Inhabited houses,	2,755,710	188,229
Acres to each person,	2,150	5,212
Persons to each house,	5,441	4,843

The extent of land in England and Wales, under the principal description of crops, the average produce per acre, total value, &c., are calculated to be as follow: (*Ibid.*, vol. i. p. 549.)

	Acres in crop.	Produce per Acre.	Total Produce.	Total Value.
		Qrs.	Qrs.	£.
Wheat	3,800,000	4	15,200,000	32,571,427
Barley	1,500,000	4¼	6,375,000	8,196,420
Oats and rye	2,500,000	5	12,500,000	10,714,286
Beans and peas	500,000	3¾	1,875,000	2,410,714
Potatoes, turnips, and rape	2,000,000	£7 per acre	..	23,100,000
Clover	1,300,000			
Fallow	1,500,000		..	..
Hops	50,000	£15 per acre	..	750,000
Gardens	150,000	£15 "	..	2,250,000
Total	13,300,000		35,950,000	79,992,857

The annual value of the produce of the grazing and wood-lands of England and Wales is thus estimated by Mr. McCulloch: (*Ibid.*, vol. i. p. 550.)

Cattle, 1,200,000,	at £12	0s.	each,	- - - - - - - - -	£14,400,000
Calves, 200,000	" 3	0	"	- - - - - - - - -	600,000
Sheep and lambs, 6,800,000	" 1	10	"	- - - - - - - - -	10,200,000
Wool, 360,000 pks. at	12	0	"	- - - - - - - - -	4,320,000
Swine, 555,000 at	1	16	"	- - - - - - - - -	1,000,000
Horses, 200,000 "	15	0	"	- - - - - - - - -	3,000,000
Poultry, eggs, rabits, &c. - -				- - - - - - - - -	1,344,000
Meadow and grass - -				- - - - - - - - -	13,000,000
Dairy produce - - -				- - - - - - - - -	12,000,000
Wood - - - - -				- - - - - - - - -	1,750,000
					£61,614,000

The produce of pasture and wood-land he estimates at an average of **£3, 12s.** per acre.

THE POOR FARM BOY, HOW HE ROSE.

About forty years ago, somewhere in the woods near the line between Tennessee and Kentucky, in a log-cabin sixteen feet by eighteen, which was already occupied by a brood of ten or twelve children, was born a youngster, the hero of our sketch. In his infancy he was fed on corn and hominy, bear meat, and the flesh of such "wild varmints" as were caught in the woods. At twelve years of age he was put out to work with a neighbor as a farm-boy, and drove oxen, hoed corn, raised tobacco in the summer, cured it in the winter, till he was seventeen years old, when he took to making brick, to which he added the profession of a carpenter; and by these successive steps in mechanical arts he became able, by his unassisted skill, to raise a house from the stump, and complete it in all its parts, and to do it, too, in a manner that none of his competitors could surpass. His panel doors are to this day the wonder and admiration of the country in which they continue to swing on hinges. He never saw the inside of a school-house or church till after he was eighteen years old. By the assistance of an old neighbor, he learned to read and write, when a farm-boy. Having achieved these valuable acquisitions by the aid of another, all his other education has been the fruit of his own application and perseverance. At the age of twenty-two he conceived the idea of fitting himself for the practice of law. He at first procured an old copy of Blackstone, and having, after the close of his daily labors, by nightly studies over a pitch-knot fire in his log-cabin, mastered the contents of that compendium of common law, he pursued his researches into other elementary works. And having thus, by great diligence, acquired the rudiments of his profession, he met with an old lawyer who had quit the practice, or whose practice had quit him, with whom he made a bargain for his secretary library, for which he was to pay **$120** in carpenter's work, and the chief part of the job to be done in payment of these old musty books was dressing and laying down a floor or floors, *three* dollars per square of ten feet. The library paid for, our hero dropped the adze, plain, and trowel, and we soon after hear of him as one of the most prominent members of the Mississippi bar, and an able statesman and orator. "I heard him one day," says one, "make two speeches in succession, of three hours in length each, to the same audience, and not a movement testified any weariness on the part of a single auditor, and during their delivery the assembly seemed swayed by the orator, as weeds before the wind."

That poor farming boy is at present at Washington, a member of Congress from Mississippi, and was a prominent member of the recent whig national convention at Philadelphia. His name is Patrick W. Tompkins. He is a self-made man, and his history shows what an humble boy can do when he determines to try.—*Saturday Rambler.*

BUSINESS AND RESOURCES OF SNOW-HILL, AND ITS VICINITY, IN MARYLAND.

ADVANTAGES OF STEAMBOAT COMMUNICATIONS.

We are glad to see, by the by, in "The County Shield," proper evidences of activity and thrift in that region, such as vessel-building, timber-getting, the establishment of steamboat and other lines of communication, with Baltimore, New York, &c.

"It is rumored," says that respectable journal, "that Captain John T. Turner, the former polite and popular commander of the steamers Osiris and Cambridge, is preparing a steamboat to run between this place and Baltimore. His enterprise would be handsomely sustained, and both himself and boat would be welcomed universally by our citizens. There is no better route for a steamboat than this, on the Chesapeake Bay, at the present time."

No one who has ever taken passage with Captain Turner, but can testify to the justice of the compliment paid him, and truly, what a difference it *does* make in comfort, to the passenger, (who can't help himself,) between the gentleman-like urbanity of *some* captains and hotel-keepers, their stewards and bar-keepers, and the coarse, vulgar, self-sufficient speech and deportment of some others, puffed up with the pride of a little "brief authority." How easy is it for the reader to instance for himself examples of the two characters. Of the former and the better, there need be none more exemplary than Captain T., and others we could name. We should, indeed, make not more than two or three exceptions on the Chesapeake Bay.

In respect of steamboats, they would ultimately prosper and do well, on many routes where they have never been tried, or where they have too soon given it up as a losing concern, if they could afford to persevere a little longer. This was the case with the first attempt at West River, now among the most profitable routes, and it took many an unrequited line by these three fingers to persuade them back to another trial. It is in the nature of things, that railroads and steamboats should *make business for themselves*, bringing a thousand things out of the ground that would otherwise never be produced, because they cannot bear long and distant transportation, by *slow conveyances!*

If the legislatures would compel railroads, before they grant them charters, (and under the penalty of forfeiture for non-compliance,) to stipulate to provide cars and depots, and all the requisite facilities for transportation of every species of agricultural and horticultural, and dairy, and poultry-yard produce, all the lands, for instance, along the Washington, and Annapolis, and Cumberland Railroads, would enjoy the same advantages that those do which are near the large cities. Thus it is with the railroads in the Eastern States, and thus it is that we see *ninety tons* of milk and strawberries going probably one hundred miles on the Erie Railroad, into New York. So too on the Albany and Boston road; a farmer has no hesitation nor difficulty in sending a lamb, or a pig, or a dozen eggs, or a pound of butter, for one hundred miles, fresh into the Boston market, and gets his return at one of the *very numerous* depots along the road, he remaining at home the while, improving his estate, which constitutes, in fact, a part of the suburbs of the city.

In this case of the proposed steamboat, for example, from Snow-Hill to Baltimore, as soon as it should be ascertained that one would be continued on the line, the travel would begin to turn from its old, into this new and more convenient channel, and what a change would soon begin, and ultimately be established, in all the courses of rural industry, to accommodate

themselves to the new facilities which such a quick transportation to large markets would afford? Bulky and perishable vegetables, and delicate fruits, and butter, and lamb, and veal, and a thousand other things not now cultivated or produced, and which would bring a better return to labor and capital, would take the place of the two or three old everlasting staples, which are now grown from the shores of the Chesapeake to the foot of the Rocky Mountains.

But to insure these new branches of productive industry to take root, and to realize the fruits of such new facilities, must be the work of *some time*, even of a few years. A new industry cannot spring up, like a mushroom, in one night; and hence again the necessity and the advantage of a *union* of means and capital, and of a public sentiment and course of legislation that shall *encourage*, instead of *forbidding* such associations, to create banks, and build factories, and railroads, and steamboats. The loss, for example, that a boat might sustain for a year or two, might be but illy borne by such a man as Captain Turner, or other one or two individuals, however public-spirited, when divided among a company would hardly be felt, until the very presence of this new facility would generate business for itself, and *ultimately prove profitable.*

Not only the travel which now takes other routes, would gradually turn itself into this new channel, but from the light warm soil of that region, the great and growing markets of Baltimore and Philadelphia would soon be supplied with fruits, vegetables, lamb, butter, veal, poultry, eggs, and very many other things not now produced, because they won't bear transportation by slow conveyances to distant markets, and thus it is that such regions, on navigable water, so blessed with genial climates and early vegetation, lose the advantages God and nature intended they should enjoy, if not improved with intelligent vigilance.

Could such a boat be kept for a year or two on the line, the good people of Worcester would soon begin to realise what it is the leading object of this journal to insist on, as the *first great element of agricultural and horticultural prosperity*, namely, *concentration;* or what is the same thing, bringing the consumers, with their machinery, the loom and the anvil, the lapstone and the hammer, the furnace and the crucible, the mill and the manufactory, near in point of time, and therefore virtually near in locality to the plough. The Snow-Hill country ought to drug the markets of Baltimore and Philadelphia with strawberries, and raspberries, and grapes, and tomatoes, and potatoes, and peas, and beets, and cucumbers, and eggs, and chickens, and melons, and all sorts of things, before they could be supplied from the immediate vicinity of those cities. But, alas, what salvation is there for people—ah, how lamentable to add, for the *farmers*, the *yeomanry*, the *bone and sinew*, and *salt* of the land, as they ought to be; who give up themselves and their precious time to be ridden by demagogues, who make them stalking-horses to climb on their shoulders into office? What but stagnation, if not going astern, for people who come together one-half at a time, for party purposes? Who do not turn their thoughts upon their own condition, and study how to improve it; and who rarely read for amusement or knowledge, any thing but the *party paper of their own state?* Has any farmer of Worcester county, for instance, ever inquired of his representative in Congress, of whatever *side*, (for while we really happen not to know which it is, ten to one that he "*belongs*" exclusively to one *side;*) has he ever asked him, for example, if he can tell how much, what proportion of the taxes indirectly levied on the people, (and for which he probably votes,) is appropriated for the support of the *military institutions* of this much-boasted model Republic? What would his representative say, if told

that the proportion, even in time of peace, has been, for many years, 80 per cent. of the whole expenses of government? Has the farmer of Worcester, or any other county in Maryland, inquired of his representative whether he has ever reflected on this question: How much of the food, consumed by the laborers employed in fabricating the forty millions we import from England, is the produce now, not of American, but of *foreign ploughs?* The produce of countries where, labor being unprotected, the people are as poor as we shall become, if we leave our trade with foreign countries to "regulate itself," while they regulate all against us, and every thing for themselves!! Has he ever asked his representative how much of the produce consumed by these foreign operatives, who make manufactures for our market, is produced by the labor of thousands of *white women*, serfs of Russia, who labor in the fields without shoe or stocking, glove or bonnet? Food that would be the growth of our own country, consumed by labor in our own country, were such goods manufactured in our own country, for which nature has provided every facility. Such inquiries would soon lead him to see how much more important than any possible crumb of public patronage, which he, or his, may happen to pick up around the tables of men in power, would be the establishment of a policy that should place, as we have arranged them, *the loom and the anvil, in juxta-position with the plough.*

Until the farmer and the planter make all these inquiries for themselves, let them not complain of hard times, or even make pretensions to self-respect and knowledge of their own rights. If our language is plain, we believe it to be true, as we know it to be sincere; and perhaps we ought not to conclude without adding, that it is equally applicable to other parts of our own native and beloved state, as well as to other states. What say you, Reader? for you must be the judge.

PRIZE ESSAYS.

The Royal Agricultural Society of England consists of seven thousand members. At its late meeting, the following schedule of the subjects, and respective amount of the prizes, was unanimously agreed to.

The reader will readily see what a degree of research such essays require, and how much valuable information they are calculated to bring forth.

"*Farming in Lancashire*," for example, means a complete survey and report of the staples and course of husbandry, its domestic animals, implements, buildings, wages for labor, average products, &c., for that county, and so of others; making known all excellencies worthy of imitation, and as frankly exposing all defects. How many of our institutes might follow suit in measures like these, which go to develop mind and augment information, instead of *increasing fat*, or paying for the application of a few loads more of manure.

Farming of Lancashire,	£50
Farming of Sussex,	50
Farming of South Wales,	50
Laborers' Cottages, (Essay and Model,)	50
Laborers' Cottages, (second best Essay,)	20
Breeding and Management of Pigs,	20
Increasing the supply of Meat	50
Management of Barley,	15
Agricultural Buildings,	50
Breeds of Sheep for different localities,	20
Top-dressing soil with Marl, Clay, &c.,	15
	£390

The Council also agreed to offer £50 for the best Essay on the Destruction of the Wire-worm, to be sent in to the Secretary on or before the 1st of March, 1850.

Now all these essays, for some of which, as will be seen, as much as $250 are to be paid, we shall receive within two or three weeks after they are published. But say some, they are *English;* they don't suit us. Well, would it not be strange if nothing worthy of notice could be found in essays that describe the farm management of the most highly cultivated and productive parts of the civilized world, except—the acre of land mentioned lately by the correspondent of the National Intelligencer, which yielded eight hundred bushels of potatoes, and the Lord knows how many turnips and cabbages! But they grew under "the auspices" of the American Institute. Is it likely that there is nothing to be learned from an essay for which $100 is to be given, on Breeds of Sheep for different localities?

TO DESTROY THE WIRE-WORM.

S. Davidson, of Greece, Monroe county, N. Y., states, in the Genesee Farmer, that he successfully destroys the wire-worm, and other insects, by covering the ground two or three inches with straw, where it remains two or three weeks to settle. During this time the worms work on the surface, under the straw. On a dry day the straw is burned, destroying worms and eggs. This remedy was applied to a part of a field, "full of wire-worms." Where the fire went, there has been no appearance of wire-worms; on the rest of the field they continued abundant.

HORSEMANSHIP IN CHILI.

The Guachos are well known to be perfect riders. The idea of being thrown, let the horse do what it likes, never enters their head. Their criterion of a good rider is a man who can manage an untamed colt, or who, if his horse falls, alights on his own feet, or can perform other such exploits. I have heard of a man betting that he would throw his horse down twenty times, and that nineteen times he would not fall himself. I recollect seeing a Guacho riding a very stubborn horse, which three times successively reared so high as to fall backwards with great violence. The man judged with uncommon coolness the proper moment for slipping off—not an instant before or after the right time; and as soon as the horse got up, the man jumped on his back, and at last they started at a gallop. The Guacho never appears to exert any muscular force. I was one day watching a good rider, as we were galloping along at a rapid pace, and thought to myself, "surely, if the horse start, you appear so careless on your seat, you must fall." At this moment, a male ostrich sprang from its nest, beneath the horse's nose; the young colt bounded on one side like a stag, but as for the man, all that could be said was, that he started and took fright with his horse. In Chili and Peru, more pains are taken with the mouth of the horse than in La Plata, and this is evidently a consequence of the more intricate nature of the country. In Chili, a horse is not considered perfectly broken, till he can be brought up standing, in the midst of his full speed, on any particular spot, for instance, on a cloak thrown on the ground; or, again, he will charge a wall, and, rearing, scrape the surface with his hoofs. I have seen an animal bounding with spirit, yet merely reined by a forefinger and thumb, taken at full gallop across a court-yard, and then made to wheel round the post of a veranda with great speed, but at so equal a distance that the rider, with outstretched arm, all the while kept one finger rubbing the post. Then making a *demi-volte* in the air, with the other arm outstretched in a like manner, he wheeled round with astonishing force in an opposite direction.—*Darwin's Researches.*

STRUCTURE OF ICE-HOUSES ON LOW GROUNDS.

With much regret we learn the ice in the different ice-houses in town is nearly gone. In several it has all melted. We have heard it suggested, that a number of our citizens think of sending for a vessel load to Boston, or some one of the northern cities. We hope it may be done—for it is quite indispensable in the fall sickness.—*County Shield, Snow-Hill.*

We would recommend, not only our friends of Snow-Hill, but all those residing on the flats of tide-water, and the river bottoms of the west and south-west, to try the Chinese method of keeping ice, for it is not only founded upon sound philosophical principles, but it is less costly than any other.

ICE-HOUSES IN CHINA.

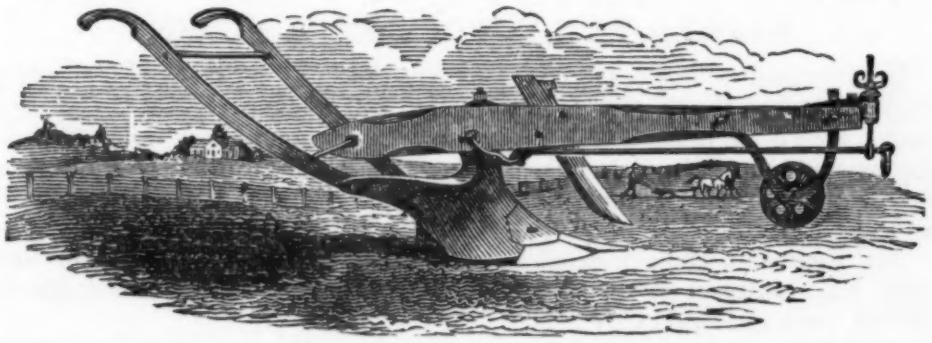
A short time before I left England, you published in the *Gardener's Chronicle*, a number of letters and plans for the construction of ice-houses, but, as far as I can remember, nothing at all resembling the Chinese one, which I shall now describe to you. On the left bank of the Ningpo river, proceeding upwards from the town and forts of Chinghai, and in various other parts in the north of China, I have met with these ice-houses. When I inspected them for the first time last winter, (1843,) their construction and situation differed so much from what I had been accustomed to consider the essentials of an ice-house at home, that I had great doubts of their efficiency; but at the present time, which is the end of August, 1844, many of these houses are yet full of ice, and seem to answer the end most admirably. You are probably aware, that the town of Ningpo is built in the midst of a level plain from twenty to thirty miles across. These ice-houses stand on the river sides, in the centre of this plain, completely exposed to the sun—a sun, too, very different in its effects from what we experience in England—clear, fierce, and burning—which would try the efficiency of our best English ice-houses, as well as it does the constitution of an Englishman in China.

The bottom of the ice-house is nearly on a level with the surrounding fields, and is generally about twenty yards long by fourteen broad. The walls, which are built of mud and stone, are very thick, twelve feet in height, and are, in fact, a kind of embankment rather than walls, having a door through them on one side, and a kind of sloping terrace on the other, by which the ice can be thrown into the house. On the top of the walls or embankment, a tall span roof is raised, constructed with bamboos thickly thatched with straw, giving the whole an appearance exactly resembling an English haystack. And this is the simple structure which keeps ice so well during the summer months, under the burning sun of China! The Chinaman, with his characteristic ingenuity, manages also to fill his ice-house in a most simple way, and at a very trifling expense. Around the house he has a small, flat, level field, which he takes care to overflow in winter before the cold weather comes. It then freezes and furnishes the necessary supply at the door. Again, in spring these same fields are ploughed up, and planted with rice; and any water which comes from the bottom of the ice-houses, is conveyed into them by a drain constructed for the purpose. Of course, here, as elsewhere, the ice is carefully covered up with a thick coating of straw when the house is filled. Thus, the Chinaman with little expense in building his ice-house, and an economical mode of filling it, manages to secure an abundant supply for preserving his fish during the hot summer months. This, I believe, is the only, or at least the principal purpose to which it is applied in this country, and never for cooling wine, water, or making ices, as we do in Europe.

THE GREAT IMPROVEMENT IN THE GREAT IMPLEMENT OF AGRICULTURE.

It is considered due to agricultural history, to preserve, in favor of a great invention, the following testimony from one among the most intelligent, judicious, and estimable cultivators of the soil, with whom we have had the happiness to become acquainted.

In any country, governed as all *countries* should be, in the nearest possible conformity to the public interest, Mr. Prouty, for this invention, would be placed by the public authority, and by the public esteem, far above any inventor of the instruments of human destruction, as they are placed, among barbarians, in advance of all others. But, alas! they are not savages only who give precedence to the art and the practice of shedding human blood.



The Prouty & Mears Patent Centre-draught Plough.

Lexington, Mass., February 25, 1846.

To Mr. James Pedder,

Dear Sir:—You ask my opinion of the "Centre-draught Plough." I give it freely and in a few words. If my opinion of its merits will, in any measure, induce my brother farmers to adopt this, in preference to any other plough now in use, I shall feel that I have rendered an important service to the public, and, at the same time, contributed my share toward the discharge of the debt of gratitude due to the inventor of this invaluable improvement, in an implement of so great importance to agriculture.

I have, for twenty-five years past, personally superintended my own estate, part of which I have annually had under the plough. I have tried English, Scotch, and every variety of American ploughs, and presume I shall be excused for saying, that I consider myself a competent judge of their relative value in the hands of farmers. The application of the "Centre-draught" principle to the plough, by Messrs. Prouty & Mears, is, unquestionably, the greatest improvement that has been made in the implement since its first invention. The remedy for the long existing evil of having the whole resistance *on one side* of the line of draught, and the necessity of placing the centre of resistance exactly *on the line of draught*, first suggested itself to the philosophical mind of David Prouty.

Mr. Prouty was a practical farmer. He saw the objections to the old-fashioned plough—his ingenious mind set about devising means, whereby the power of draught might be greatly lessened; the liability to wear, in certain parts more than others, obviated; the labor of managing greatly diminished, and, at the same time, doing the work infinitely better; and well has he done it. And when this improvement shall be generally adopted by farmers, and its merits justly appreciated, Mr. Prouty will be ranked among the greatest benefactors of his age. And although some of his contemporaries may injure him by unjustly interfering with his rights, and appropriating to themselves some of the fruits of his ingenuity—they can never rob him of his well-earned fame—posterity will do justice to his memory. And the approbation and magnificent testimonial of one of the most powerful and enlightened monarchs of Europe, is but a foretaste of what he may expect from his own countrymen, when the merits of his invention shall be rightly appreciated.

I am aware that my strong convictions of the vast utility to farmers of this improve-

ment in the plough, may lead me—in the minds of some—to speak in extravagant terms of the merits of the inventor. But you have known Mr. Prouty; you have been familiar with the operations, and can fully appreciate the benefits of his invention; and by you, I presume, I shall not be charged with bestowing unmerited praise, in saying, that if the farmers of his own state should appropriate to that object, but a *single tithe* of what this improvement in the plough has saved them, in the cultivation and better condition of their farms, it would raise a monument to his memory, which would not be transcended in beauty, in grandeur and durability, by any that have been erected to the memory of the greatest benefactors of mankind.

With great respect,
I am, my dear sir,
Very truly and sincerely yours,

E. PHINNEY.

CLAYTON B. REYBOLD'S ANNUAL SALE OF LONG-WOOLED NEW OXFORDSHIRE BUCKS,

Is advertised to take place near Delaware City, in the State of Delaware, on Wednesday, the 2d of August. There will be offered about twenty-five bucks, which he believes to be superior in all points to those disposed of at his former sale. The sire of the bucks to be sold, "took the first prize for the best long-wooled sheep, at the Saratoga meeting, in the fall of 1847," and weighed alive, 15th of May, 1848, three hundred and sixty-one pounds.

Mr. Reybold will be pleased to see any gentleman who will favor him with his company, on the day above mentioned, at his residence, Marsh Mount, near Delaware City.

We shall endeavor to be there "or thereabouts," in person or by proxy—the former would be far the more agreeable of the two. If landed men always draw their purse-strings close on these occasions, how can they expect a supply to be kept up, of the best blood, to ensure general improvement? Rely on it, gentlemen, it is true economy to "shell out," on such occasions. With one male, you readily and quickly improve your whole flock or herd. Colonel Lloyd, as we remember, warmly contended, before he saw the real improved short horn, exhibited with the last finish that had been given to them in England, that we had some as good cattle as were to be found in the world; but when he saw CHAMPION and SHEPHERDESS and WHITE ROSE, he did not hesitate to lay down $1500 for the three; and as soon after as there was time for Champion's blood to tell upon his numerous herds, (for he owned fourteen farms,) he said he considered himself well paid for his outlay, in one crop on his old stock; which he had thought was already first-rate. It is an obligation of duty and honor, as well as of interest, to encourage the importation of the best to be had.

ANNUAL SALES OF IMPROVED STOCK PROPOSED.

WOULD it not be well, if Mr. VAIL, for instance, and other breeders of improved stock, would follow the example set by Mr. REYBOLD, to hold public sales, every year, on a *given* day, where the flocks and herds, like theirs, are sufficiently large and of sufficient purity and excellence to justify it.

How would it do to have at Saratoga, every year, say on the 10th of August, a sale of improved sheep and cattle? There would be few sold, perhaps, at first, but it might soon grow into an affair of great consequence and convenience to the public.

COFFEE.

NOWHERE does woman appear to greater advantage than in dispensing the hospitalities of her own house, and we confess ourselves to be so old-fashioned, so far behind the times, as to admire her more in the seclusion of that domestic circle, which owes its chief charm and refinement to her, than in the rostrum of a lecture room, or in the prominent position of an officer of a "Tee-total." Let *our* daughters cultivate the literature of domestic economy, and the elegancies of private life, leaving Utopian schemes to those who court the glare and the gaze of the world. As a specimen of what we mean by the Literature of Domestic Economy, we give here all that is known about *Coffee*, and we are sure that our fair readers will not dispense its nectar less gracefully for being *learned in the history* of this delightful beverage.

Coffee is named after Caffa, in Africa, where it grows abundantly. This berry, which affords such a wholesome and agreeable beverage, is said to have been drunk from time immemorial in Ethiopia, but for this we have no satisfactory authority; and as the use of most plants has been accidentally discovered, it is probable that the properties of coffee might have been first found out in the manner related by Chambers, who says that a goatherd observed that his cattle, after browsing on this tree, would wake and caper all night; and the prior of a certain monastery being informed of it, first made use of the berry to prevent the monks from sleeping at matins.

About the fifteenth century, the use of coffee appears to have been introduced from Persia by Gemaleddin, mufti of Aden, a city near the mouth of the Red Sea. He, finding it dissipate the fumes which oppress the head, give cheerfulness, and prevent sleep, without injury, recommended it to his dervises, with whom he used to spend the night in prayer. It was soon after this drunk at Aden by all studious persons, and those who travelled by night. It was progressively used at Mecca, Medina, &c., and Grand Cairo: hence it continued its progress to Damascus and Aleppo. From the two latter places, it was introduced into Constantinople by persons of the name of Shems and Hekin, in the year 1554, each of whom opened a public coffee-house in that city. These coffee-houses becoming a rendezvous for newsmongers, who made too free with state affairs, were suppressed by Caproli, the grand vizier.

Rauwolfus, who was in the Levant in 1573, was the first European author who made any mention of coffee; but the first who has particularly described it is Prosper Alpinus, in his *Medicina Ægyptiorum*, 1591, and in his History of Egyptian Plants, published at Venice in 1592.

The Venetians seem to be the next who used coffee. Pietro della Valle, a Venetian, writes from Constantinople in 1615, informing his friend, that upon his return he should bring him some coffee, which he believed was a thing unknown in his country. This beverage was noticed by two English travellers at the beginning of the 17th century, Biddulph about 1603, and William Finch in 1607. The former says, "the Turks have for their most common drink, *Coffa*, which is a black kind of drink, made of a kind of pulse like peas, called *Coava*." The latter observes, "that the people in the island of Socotora have, for their best entertainment, a China dish *Coho*, a black bitterish drink, made of a berry like a bayberry, brought from Mecca, supped off hot."

Lord Chancellor Bacon mentions it in 1624: he says, "the Turks have a drink they call coffee, made with boiling water from a berry reduced into powder, which makes the water black as soot, and is of a pungent and aromatic smell, and is drunk warm."

M. La Roque, who published his journey into Arabia Felix in 1715, contends that his father having been with M. de la Haye, the French ambassador at Constantinople, did, when he returned to Marseilles, in 1644, drink coffee every day; but the same author acknowledges that it was M. Thevenot who taught the French to drink coffee, on his return from the East, in 1657. It was made fashionable and more known in Paris, in 1669, by Soliman Aga, ambassador from Sultan Mahomet the Fourth, who gave coffee at all his parties with great magnificence; and it could not fail to be pronounced an agreeable beverage by the Parisian ladies, after they had received it from his slaves on bended knee. If it were a matter of policy with the Turks to get coffee introduced into France, the ambassador's splendid porcelain, equipage, and gold-fringed napkins, were the best recommendation that could have been given to a people who are so naturally fond of show.

Two years after, it was sold in public at the Foire St. Germain, by Pascal, an Armenian, who afterwards set up a coffee-house

on the Quai de l'Ecole; but, not being encouraged in Paris, he left that city, and came to London. However, soon after this, some spacious rooms were opened in Paris for the sale of coffee, and they soon increased to upwards of three hundred.

It is said to have been first brought to England by Mr. Nathaniel Conopius, a Cretan, who made it his common beverage, at Baliol College, at Oxford, in the year 1641; but it must evidently have been a few years prior to this date, as Evelyn says, in his Diary, 1637, "There came in my tyme to the Coll: one Nathaniel Conopios out of Greece, from Cyrill the Patriarch of Constantinople, who, returning many years after, was made (as I understand) Bishop of Smyrna: he was the first I ever saw drink coffee, w^th^ custom came not into England till 30 years after."

The first coffee-house in England was kept by one Jacob, a Jew, at the sign of the Angel, in Oxford, in 1650. Coffee was first publicly known in London in 1652, when Mr. Daniel Edwards, a Turkey merchant, brought home with him a Ragusan Greek servant, whose name was Pasqua Rossée, who understood the roasting and making of coffee, and kept a house for that purpose, in George Yard, Lombard street, or rather, according to Mr. Houghton, in a shed in the Churchyard of St. Michael's, Cornhill. This seemed to give alarm to the ale-sellers, who, taking advantage of Rossée's not being free of the city, petitioned the Lord Mayor against him; but Mr. Edwards having married a daughter of Alderman Hodges, the alderman joined Bowman, his coachman, who was a freeman, as a partner with Pasqua Rossée. The Greek was afterwards obliged to leave the country for some misdemeanor; and Bowman, by his business, and the aid of a subscription of one thousand sixpences, was enabled to convert his shed into a coffee-house. The famous Dr. Harvey used it frequently. Mr. Ray affirms, that in 1688, London might rival Grand Cairo in the number of its coffee-houses, so rapidly had it come into use; and it is thought that they were augmented and established more firmly by the ill-judged proclamation of Charles the Second, in 1675, to shut up coffee-houses as seminaries of sedition: this act was suspended in a few days.

The first mention of coffee in our statute books is in 1660, (12 Char. II., cap. 24,) by which a duty of fourpence was laid upon every gallon of coffee bought or sold. Kæmpfer says, "that Mocha is the peculiar region of coffee:"—"Kahwah; quæ nullibi terrarum quàm circa Mocham Arabiæ felicis colitur." (*Amœn. Exot.* p. 123.)

Bruce, however, would trace it to Caffa, "the south province of Narea, whence it is first said to have come." (*Travels, &c.*, vol. ii. p. 411.)

The Arabs seem to have been very jealous of letting this tree be known; and in order to confine the commodity to themselves, they destroyed the vegetable quality of the seeds; but Nicholas Witsen, burgomaster of Amsterdam, and governor of the East India Company, desired Van Hoorn, governor of Batavia, to procure from Mocha, in Arabia Felix, some berries of the coffee-tree, which were obtained and sown at Batavia; and about the year 1690, several plants having been raised from seeds, Van Hoorn sent one over to Governor Witsen, who presented it to the garden at Amsterdam. It there bore fruit, which in a short time produced many young plants: from these the East Indies and most of the gardens in Europe have been furnished. In 1696, it was cultivated at Fulham, by Bishop Compton; and in 1714, the magistrates of Amsterdam presented Louis the Fourteenth with a coffee-tree, which was sent to the royal garden at Marli. In 1718, the Dutch colony, at Surinam, began first to plant coffee; and in 1722, M. de la Motte Aigron, governor of Cayenne, contrived by an artifice to bring away a plant from Surinam, which, by the year 1725, had produced many thousands. The French authors affirm that it was planted in the Isle of Bourbon, in the year 1718, having been obtained from Mocha. This seems doubtful; but it is ascertained that M. Declieux carried the first coffee-plant to Martinico in 1720.

This passage was long and dreary, and fresh water being scarce in the vessel, made it necessary to limit every one to a small portion daily, to make it last out the voyage, when this gentleman deprived himself of a great part of his allowance in order to keep these valuable trees alive. M. Fusée Aublet states that one tree only survived in the Isle of Bourbon, which bore fruit in 1720. From Martinico it spread to the neighbouring islands. Sir Nicholas Laws first introduced it into Jamaica, in the year 1728, and planted it at Townell Estate, now called Temple Hall, in Liguanea: the first berries produced from this tree sold at a *bit* each, which is equal to 6*d.* In the year 1752, the export of coffee from Jamaica was rated at 60,000 lbs.; and it has continued regularly to increase since that time, except when additional duties have been laid on, which have as regularly lessened the exports and the revenue also; an important proof, among others, how frequently heavy taxation defeats its own purpose. In 1791, there were 607 coffee plantations in Jamaica, employing 21,000 negroes. In 1808, the exports from Jamaica were 29,528,273 lbs.; the

next year they were lessened about four millions of pounds; in 1812, the export was 18,481,986 lbs. The Abbé Raynal says, that 12,550,000 pounds of coffee are annually exported from Arabia Felix.

Almost every species of the vegetable creation has an apparent enemy peculiar to itself in the animal tribe, but which is undoubtedly intended for some wise purpose, although often beyond our investigation. The finest coffee-tree in our colonies, and sometimes a whole plantation, is seen to perish in a short time. This is often occasioned by an insect called the coffee fly; this fly is very long, and has attached to its head two saws, with which it sometimes cuts these trees to the very heart. The white vine-fretters also attack the coffee-tree, to prevent which, pine-apples are planted between the trees, because these insects, preferring the juice of this fruit, eat of it, which causes their death.

Every gentleman who has stoves should raise this tree for the beauty of its appearance. It is an evergreen, whose leaves continue three years; and being of a fine dark green, make a beautiful contrast with the clusters of pure white blossoms, which perfume the air with an odour like jasmine. Nothing can be conceived more delightful and grateful than the appearance and perfume of a field of coffee-trees when in full bloom; it resembles a shower of snow, which nearly obscures the dark green branches. The tree, like the walnut, produces smaller fruit, and better flavored, as it becomes older.

Sonnini, in his Travels in Egypt, says, "If you wish to be supplied with excellent coffee, you must go to Kous, Kenné, or Bonoub; for when one had arrived at Cairo, or had crossed the Nile, it was no longer pure. Merchants were waiting there to mix it with the common coffee of America. At Alexandria it underwent a second mixture by the factors who forwarded it to Marseilles, where they did not fail again to adulterate it; so that the pretended Mocha coffee which is used in France, is often the growth of the American colonies, with about one-third, and seldom with half of the genuine coffee of Yemen. When I was at Kous, the unadulterated coffee of the first quality sold for about tenpence halfpenny the pound. If to prime cost is added the expense of conveying it to Cairo, the duties which are paid there, the charges for loading and unloading, those for transporting it to Alexandria, freight to Marseilles, the exorbitant and arbitrary duties with which that commodity is there loaded, and if to these are added commission and the expense of grinding, &c., how is it possible to believe that they should have real Mocha coffee at Paris, at the rate of five shillings per pound?

The Turkey coffee is a small berry, and is more esteemed for its flavor than that which grows in the West Indies. We conclude that one great cause of the American coffee being inferior in point of flavor, is owing to the practice, in that part of the world, of gathering the berries before they are quite ripe, whereas the Arabians shake their trees, and by this means obtain the berries in full perfection. Mr. Lunan observes, that the West Indian berries being considerably larger than those of the Turkey coffee, require much longer keeping; but Mr. Miller, the celebrated gardener, is of opinion, that coffee does not require long keeping, and that it loses a part of its flavor. He states that two gentlemen, who resided some years in Arabia, assured him that the berries, when first ripe, were very superior to those which had been kept. He also states, that from plants brought from the West Indies, and raised in English hothouses, coffee berries have been produced, which, at a proper age, were found to surpass the very best Mocha that could be produced in Great Britain. Jamaica coffee is often sold as Turkey coffee in London, and there have been many samples sent from Jamaica, that have proved quite equal to any Arabian berries. As coffee readily imbibes the smell or flavor of any article it comes in contact with, it is often injured in the voyage home, by being stowed near sugar, rum, pimento, &c. &c.; and the flavor which it thus contracts cannot be separated again, even by roasting.

The most eminent physicians of every country have recommended the use of coffee for various complaints. It greatly relieves the headache, and is recommended to those of constitutionally weak stomachs, as it accelerates the process of digestion, removes languor and listlessness, and affords a pleasing sensation. Coffee is often found useful in quieting the tickling vexatious cough. Sir John Floyer, who had been afflicted with the asthma for sixty years, was relieved by strong coffee. The great use of coffee in France is supposed to have abated the prevalency of the gravel, for where coffee is used as a constant beverage, the gravel and the gout are scarcely known. Voltaire lived almost wholly on coffee, and said nothing exhilarated his spirits so much as the smell of it; for which reason he had what he was about to use in the day roasted in his chamber every morning, when he lived at Ferney.

A friend writes me from Constantinople, that many of the Turks will subsist almost entirely on coffee, except during the rigid fast of the Ramadan, or Turkish Lent, which

lasts forty days; during which time they neither eat, drink, nor smoke, while the sun is over the horizon; and the use of coffee is then so strictly forbidden, that those who have even the smell of coffee on them, are deemed to have violated the injunctions of their prophet: yet it is estimated that as much money is spent in coffee at Constantinople as in wine at Paris. Among the legal causes of divorce with the Turks, the refusal to supply a wife with coffee is one. Notwithstanding the immense consumption of coffee in the Turkish capital, they have but one building where it is allowed to be roasted; a great number of persons are employed in pounding it in mortars; this is performed as soon as the coffee is taken from the oven, which causes the surrounding neighbourhood to smell strongly of this aromatic drug.

Among the various qualities of coffee, that of its being an antidote to the abuse of opium must make it an invaluable article with the Turks, who drink it without either sugar or milk. The Persians, who sip their coffee extremely hot, take it also without either of these additions; but they have an accompaniment that would not be quite so agreeable to our fair countrywomen. The Persians have a saying, that "coffee without tobacco is like meat without salt." How greatly must the habits of the Mohammedans have been changed by the introduction of these two vegetable luxuries, which now contribute to solace even the poorest inhabitants of Turkey and Persia, as much as the Chinese leaf does the English.

An interesting analysis of coffee was made by M. Cadet, apothecary in ordinary to the household of Napoleon, when emperor; from which it appears, that the berries contain mucilage in abundance, much gallic acid, a resin, a concrete essential oil, some albumen, and a volatile aromatic principle, with a portion of lime, potash, charcoal, iron, &c. Roasting developes the soluble principles. Mocha coffee is, of all kinds, the most aromatic and resinous. M. Cadet advises that coffee be neither roasted nor infused till the day it be drunk, and that the roasting be moderate.

M. Bigio, of Venice, has succeeded in extracting from coffee a green gum lac, said to be useful and beautiful in painting.

Dr. Moseley, in his learned and ingenious treatise, states, that "the chemical analysis of coffee evinces that it possesses a great portion of mildly bitter, and lightly astringent gummous and resinous extract, a considerable quantity of oil, a fixed salt, and a volatile salt. These are its medicinal constituent principles. The intention of torrefaction is not only to make it deliver those principles, and make them soluble in water, but to give it a property it does not possess in the natural state of the berry. By the action of fire, its leguminous taste and the aqueous part of its mucilage are destroyed; its saline properties are created and disengaged, and its oil is rendered empyreumatical. From thence arise the pungent smell and exhilarating flavor not found in its natural state.

"The roasting of the berry to a proper degree requires great nicety. If it be underdone, its virtues will not be imparted, and in use it will load and oppress the stomach; if it be overdone, it will yield a flat, burnt, and bitter taste; its virtues will be destroyed, and in use it will heat the body, and act as an astringent. The closer it is confined at the time of the roasting, and till used, the better will its volatile pungency, flavor, and virtues be preserved.

"The influence which coffee, judiciously prepared, imparts to the stomach, from its invigorating qualities, is strongly exemplified by the immediate effect produced on taking it when the stomach is overloaded with food, or nauseated with surfeit, or debilitated by intemperance, or languid from inanition. In vertigo, lethargy, catarrh, and all disorders of the head, from obstructions in the capillaries, long experience has proved it to be a powerful medicine; and in certain cases of apoplexy, it has been found serviceable even when given in clysters, where it has not been convenient to convey its effects to the stomach. Mons. Malebranche restored a person from apoplexy by repeated clysters of coffee.

"Du Four relates an extraordinary instance of the effect of coffee in the gout; he says, Mons. Deverau was attacked with the gout at twenty-five years of age, and had it severely until he was upwards of fifty, with chalk stones in the joints of his hands and feet; he was recommended the use of coffee, which he adopted, and had no return of the gout.

"A small cup or two of coffee, immediately after dinner, promotes digestion. With a draught of water previously drunk, according to the eastern custom, coffee is serviceable to those who are of a costive habit."

The generality of English families make their coffee too weak, and use too much sugar, which often causes it to turn acid on the stomach. Almost every housekeeper has a peculiar method of making coffee; but it never can be excellent, unless it be made strong of the berry, any more than our English wines can be good, so long as we continue to form the principal of them on sugar and water. When coffee is used as a breakfast beverage, we would strongly recommend it to be served in the manner of the

French *Café au Lait*—with a small pot of very strong coffee, they send a large jug of boiling milk, and it is generally used from about one-fourth of coffee to three-fourths of milk; thus you get nourishment from the milk and sugar, and more refreshment from a small quantity of strong coffee than a larger portion of weak.

After dinner, we would recommend it strong and hot, but without sugar or cream.

Count Rumford says, "Coffee may be too bitter; but it is impossible that it should ever be too fragrant." The very smell of it is reviving, and has often been found to be useful to sick persons, and to those who are afflicted with the headache. In short, every thing proves that the volatile, aromatic matter, whatever it may be, that gives flavor to coffee, is what is most valuable in it, and should be preserved with the greatest care, and that, in estimating the strength or richness of that beverage, its fragrance should be much more attended to than either its bitterness or its astringency. This aromatic substance, which is supposed to be an oil, is extremely volatile, and escapes into the air with great facility, as is observed by its filling a room with its fragrance, if suffered to remain uncovered, and at the same time losing much of its flavor.

We would recommend those who give coffee to evening parties, to let their attendants hand empty cups, with a coffee-pot on the tray, which would insure its being warm and with flavor.

WINDOW GARDENING.

A GENTEEL address is said, by Chesterfield, (we believe,) to be the best letter of introduction; with how much more truth may it be said, that a fondness for flowers is among the best evidences of a refined and gentle nature in those who cultivate it. We never see the window of a room filled with fresh green shrubs and blooming flowers, without being prepossessed in favor of its occupant.

In sympathy with such of our fair readers as love the smiling beauties of Flora, we append the following.

That the cultivation of flowers, even in a window, is indeed an enjoyment to the inhabitants of cities, is evident by the pleasure with which we see many of those, who live by their labors with the needle or the loom, spending the greater part of their few leisure hours in tending a few geraniums or other flowering plants arranged on a window sill; and there is something affecting in the sight, when we recollect that many of these persons probably came originally from the country, and that these few leaves and flowers are all that remain to remind them of their native fields. The plants of persons of this class are, however, generally much more healthy than those of richer cultivators, probably because they are more cared for, and more diligently watched; for no living objects more amply repay the attention bestowed upon them than flowering plants.

All plants grown in pots, and kept in a room, require more attention than they would do in any other situation, as they are in a most unnatural state, and they need the greatest care that can be bestowed upon them to counteract the bad effects of their peculiar position. To understand thoroughly how disadvantageous that position is to their growth, we must recollect that plants derive their nourishment partly through their roots, and partly through their leaves, by means of pores so extremely fine, that they can only be seen by the aid of a very powerful microscope. When a plant is kept constantly in an inhabited room, the pores of the leaves become choked up with dust, and as the air of every room inhabited by human beings must necessarily be very dry, the delicate points of the roots, which are of a soft, spongy nature, to enable them to imbibe water, become withered or dried up, and lose that power of alternate dilation and contraction, which is absolutely necessary to enable them first to absorb moisture from the soil, and afterwards to force it up through the stem and leaves. In addition to these evils, which it is extremely difficult to guard against, may be added another of almost equal importance, arising from the use of saucers to the flower-pots. These it is difficult to dispense with in a living room, as, without them, there would be danger of injuring the carpet and other articles of furniture, every time the plant is watered; for water is of scarcely any use, unless it be given in sufficient quantity to saturate the whole mass of earth in the pot, and this cannot be done without some escaping by the hole at the bottom. If, however, water be suffered to stand in the saucer, unless there be abundance of drainage in the bottom of the pot, the water will sodden the earth, and if it does, the spongioles of the roots will inevitably become rotten. Wherever, therefore, plants are kept in pots, it

should be a paramount object with the cultivator to set them out in the open air as often as possible, and then, while the pots are standing without their saucers, to give them abundance of water, either syringing their leaves, or washing them thoroughly by holding a watering-pot, with a fine rose, above them, and letting the water descend on their leaves like a shower. In summer, plants may be watered in this manner twice a day, and in spring and autumn once a day, without receiving the slightest injury from overwatering. In winter, however, the case is different; and as soon as the air becomes frosty, the plants should not be exposed to it, and they should be watered as little as possible, so as to keep them alive, unless they should be plants which flower in the winter, in which case they should be watered daily, as all plants when in flower require more water than at any other season. As these winter-flowering plants must, of course, be placed in saucers, for the sake of cleanliness, it will be necessary to take care, when the plants are watered, that the saucers are emptied out as soon as the water has run through into them, so that no stagnant water may be allowed to remain to chill the roots. Another point which should be attended to, when plants are kept in living rooms, is to remove all the dead leaves as soon as they appear, as the decomposition of vegetable matter is extremely injurious to the health of human beings. Even the plants themselves appear to grow better when all the decaying vegetable matter they produce is regularly removed from them; and not only do they grow more vigorously, but the perfume and beauty of their flowers is said to be increased.

In attending to the cultivation of plants which are to be kept in rooms, it must never be forgotten that they require air as well as water to nourish them. It has been long known that plants will not thrive unless the air has free access to their leaves; but it has only lately been ascertained that the leaves not only act in elaborating the sap, but that they also take in nourishment from the atmosphere. Air should likewise be permitted to have access to the roots moderately, so as not to dry them; as the roots can derive nourishment from it, as well as the leaves, provided they are kept in a sufficiently moist state by the earth with which they are surrounded, to be capable of taking nourishment from any thing.

The important fact that plants derive a great portion of their nourishment from the atmospheric air, was little known before the time of Liebig; and even now, it is so contrary to all our ancient prejudices, that even where it is acknowledged, it is rarely remembered when the rules derived from it are to be acted upon.

Light is as essential as air or water to the growth of plants; and as plants in pots rarely obtain a sufficient quantity when they are kept in living rooms, their stems are frequently drawn up till they become weak and slender, and neither their leaves nor their flowers are so dark as they would be if the plants were grown in the open air. When plants are grown in green-houses, they are generally placed upon a stage raised on steps one above another, and in this manner the leaves receive the full advantage of light, while the sides of the pots are not dried by exposure to the sun; but the reverse of this generally takes place when plants are kept on a window-sill, as the leaves of the plants are frequently shaded by some projecting part of the house or window; while the pots are exposed to the full influence of the sun, and thus the points of the roots of the plants contained in them are very apt to become dry and withered.

It may possibly be thought by some persons, that it is scarcely necessary to enlarge on the importance of light, air, and water, to the health of plants, as every one must be aware of that fact; this, however, is far from being the case. The generality of amateurs who cultivate plants in pots, think that the principal care requisite for their plants, is to keep them warm; and if they do not grow freely, to give them manure; but nothing can be more erroneous than this mode of treatment. Too much heat is as injurious as too much cold; and if plants are brought suddenly out of a cool green-house into a very warm room, they will become sickly, their flower-buds will fall off without expanding, and probably they will lose the greater part of their leaves.

Over-manuring is still more injurious. The roots of plants in pots are so cramped by the confined space in which they are kept, that they have seldom strength to digest strong manure; and there is no doubt that great numbers of green-house plants were killed by over-doses of guano, when it was first introduced. Giving strong manure to a sickly plant is as injurious as giving strong food to an invalid; and in both cases, does harm rather than good. If to over-manuring be added abundant watering, and want of drainage, the earth contained in the pot becomes what is called sour, and is not only totally incapable of affording nourishment, but it actually rots the roots of the plants growing in it.

INSTINCT AND REASON.

I BELIEVE that I consider with as much reverence as any one can do, and I hope that I am duly grateful for that wonderful faculty which it has pleased our infinitely wise and good Creator to bestow upon his favorite creature, man, for his guidance—I mean his inestimable gift to us of reason. At the same time, I must confess that I am very far from participating in that pride, which has led some philosophers to suppose that they should infringe upon the dignity of our highly privileged species, by admitting any of the beings which have been placed below us in the scale of creation to a share in this endowment. On the contrary, my observations of nature have all tended to lead me to think, and I believe that, in general, those who devote much of their time and attention to studying the habits and manners of animals, will be disposed to the same opinion, that if our race has been pre-eminently distinguished by receiving the full light of reason, some sparks and glimmerings of the same divine faculty have been vouchsafed, by the same forming and almighty hand, to our inferior fellow-creatures.

It is no doubt exceedingly difficult, and perhaps impossible, to define where instinct ends and reason begins, in animals. But that some of them are endowed with a faculty which does not come under the usual notion of instinct, will, I think, hardly allow of a dispute. This, as it strikes me, appears in the different degrees of intelligence which we are accustomed to recognise as elevating one species of animal above another—as the *half-reasoning* elephant, for instance, and the dog, the friend of man. Now, the instinct of one tribe, one would think, as much as of another, must be full and perfect, and would not admit of our considering the degree of intelligence manifested in one species as higher or lower than that possessed by another. Again, much more must we conceive that the proper instinct of any species will be fully, and therefore equally, possessed by all individuals of that species. How then, upon the notion of mere instinct, shall we account for that superiority of intelligence which is found in one individual, to others of the same species, and which is familiar to those who are employed about, or in any way in the habit of *conversing* with, animals? But that which appears to me most decidedly to carry the faculties of animals to something exceeding the measure and character of instinct, is the new and ingenious contrivances to which they will often have recourse, in situations, and upon occasions, much too accidental and peculiar to admit of our imagining that they could have been contemplated and provided against in the regular instinct of the whole species. Instinct, we should naturally be disposed to conceive, must have been given to regulate the ordinary habits of the animals, and adapted to those exigencies of their mode of life which are continually occurring, not to such as do rarely, and might, one would be tempted to say, never occur. A few instances will, perhaps, better explain what I mean, and carry more persuasion than a mere argument.

I was one day feeding the poor elephant (who was so barbarously put to death at Exeter 'Change) with potatoes, which he took out of my hand. One of them, a round one, fell on the floor. just out of the reach of his proboscis. He leaned against his wooden bar, put out his trunk, and could just touch the potato, but could not pick it up. After several ineffectual efforts, he at last *blew* the potato against the opposite wall with sufficient force to make it rebound, and he then, without difficulty, secured it. Now it is quite clear, I think, that instinct never taught the elephant to procure his food in this manner; and it must, therefore, have been reason, or some intellectual faculty, which enabled him to be so good a judge of cause and effect. Indeed, the *reflecting* power of some animals is quite extraordinary. I had a dog who was much attached to me, and who, in consequence of his having been tied up on a Sunday morning, to prevent his accompanying me to church, would conceal himself in good time on that day, and I was sure to find him either at the entrance of the church, or, if he could get in, under the seat where I usually sat.

A gentleman, a good shot, lent a favorite old pointer to a friend who had much more to accuse himself of in frightening than in slaughtering partridges. After ineffectually firing at some birds which the old pointer had found for him, the dog turned away in apparent disgust, went home, and never could be persuaded to accompany the same person afterwards.

I have been often much delighted with watching the manner in which some of the old bucks in Bushy Park contrive to get the berries from the fine thorn trees there. They will raise themselves on their hind legs, give a spring, entangle their horns in the lower branches of the tree, give them one or two shakes, which make some of the berries fall, and then quietly pick them up.

A fly-catcher (*Muscicapa grisola*) had

built its nest in a pear tree against my garden wall, and I had once or twice stopped and looked at the bird as she sat on her nest. Coming one morning, and looking for the nest, I could not find it for some time, but at last discovered it, completely altered in appearance, the external parts of it being now in some degree assimilated to its situation. Some of the leaves of the pear tree also seemed to have been drawn more over the nest, as if for the purpose of concealment.

A large brown slug made its way into a glass hive, where the operation of the bees could be distinctly seen. Having killed the slug, and finding that they were unable to get it out of the hive, they covered it over with the thick resinous substance called propolis, and thus prevented its becoming a nuisance to the colony. Into the same hive one of the common brown-shelled snails also gained admittance. Instead of imbedding it in propolis, the bees contented themselves with fixing it to the bottom of the hive by plastering the edge with that substance. I have now in my possession a regular fortification made of propolis, which one of my stocks of bees placed at the entrance of their hive, to enable them the better to protect themselves from the attacks of wasps. By means of this fortification, a few bees could effectually guard the entrance, by lessening the space of admission, which I had neglected to do for them.

Bees show great ingenuity in obviating the inconvenience they experience from the slipperiness of glass, and certainly beyond what we can conceive that mere instinct would enable them to do. I am in the habit of putting small glass globes on the top of my straw hives, for the purpose of having them filled with honey; and I have invariably found that before the bees commence the construction of combs, they place a great number of spots of wax at regular distances from each other, which serve as so many footstools on the slippery glass, each bee resting on one of these with its middle pair of legs, while the fore claws were hooked with the hind ones of the bee next above him, thus forming a ladder, by means of which the workers were enabled to reach the top, and begin to make their combs there. Dr. Bevan, in his very agreeable work on the honey-bee, mentions another very striking illustration of its reasoning powers. He says that a friend of his, on inspecting his bee-boxes, perceived that a centre comb, burdened with honey, had parted from its attachments, and was leaning against another comb, so as to prevent the passage of the bees between them. This accident excited great activity in the colony, but of what nature could not be ascertained at the time. At the end of a week, the weather being cold, and the bees clustered together, it was observed, through the window of the box, that they had constructed two horizontal pillars between the combs alluded to, and had removed so much of the honey and wax from the top of each, as to allow the passage of a bee: in about ten days more there was an uninterrupted thoroughfare; the detached comb at its upper part had been secured by a strong barrier, and fastened to the window with the spare wax. This being accomplished, the bees had removed the horizontal pillars first constructed, as being of no further use. Huber relates an anecdote something similar.

The power which bees possess of ventilating their hives, and of producing such a temperature as will prevent the wax from melting in hot weather, is, I think, another proof that something more than mere instinct influences their conduct; as, in their natural state, bees are probably not in so confined a space as they are in our common straw hives, or exposed so much to the heat of the sun. In hot weather, a number of bees (the number probably being regulated by the state of the atmosphere) may be observed busily employed at the bottom of the hive, moving their wings with so much rapidity, that the motion of them is almost imperceptible. If, while this action is going forward, a lighted candle should be held at the opening on the top of the hive, it will immediately be blown out, a fact which proves the strong current of air produced by these insects from the motion of their wings. I have, however, known instances, in extreme hot weather, when all the labors of the bees to keep the hive in a proper temperature have failed, and a part of the wax has melted. In this case it is dangerous to go near the hive. The bees are in a state of extreme irritation, and though I fancy that mine know me and receive me as a friend, and allow me sometimes to interfere with them with impunity, yet, at the time referred to, I have suffered from their stings in endeavoring to shelter them more effectually from the heat of the sun.

From these instances it appears evident, that some animals and insects are endowed with a faculty which approaches very near to reason. Dr. Darwin asserts, that if we were better acquainted with the histories of those insects which are formed into societies, as bees, ants, and wasps, we should find that their arts and improvements are not so similar and uniform as they now appear to us, but that they arose in the same manner (from experience and tradition) as the arts of our own species; though their reasoning is from few ideas, busied about fewer objects, and is

exerted with less energy. This argument is, however, I conceive, disproved by the undeniable fact that all animals and insects have remained in exactly the same state in which we have always known, and at present find them. Dr. Darwin gives an instance of reason in a wasp, which he himself witnessed, and which is, I think, conclusive of the fact of these insects possessing something approaching very near to it. He informs us, that walking one day in his garden, he perceived a wasp upon the gravel walk, with a large fly nearly as big as itself, which it had caught. Kneeling down, he distinctly saw it cut off the head and abdomen, and then fly away with the trunk, or middle portion of the body, to which the wings remained attached. But a breeze of wind acting upon the wings of the fly, turned round the wasp with its burden, and impeded its progress. Upon this it alighted again on the gravel walk, deliberately sawed off first one wing and then the other, and having thus removed the cause of its embarrassment, flew off with its booty. If, as has been asserted, there is no surer test of reason than when, after having tried one mode of accomplishing a purpose, recourse is had to another more likely to succeed, surely some of the instances which have been given will sufficiently prove the reasoning powers of animals and insects; or, if not quite amounting to reason, it is clear, I think, that they are in possession of a superiority of intellect which approaches very near to it.

I have often watched a wasp taken in the web of a spider. The spider seems to be so perfectly aware that the wasp has the power of annoying him with its sting, that he carefully avoids coming in contact with it, but winds threads round and round it till the wasp can neither escape nor do any injury.

There is a spider found in Jamaica which makes its nest in the earth, of grass, moss, &c., and afterwards plasters it over with clay. The inside is lined with a silky membrane, smooth, and of a whitish gray, with a valve of the same texture. When the spider wants to secure itself in the nest, it fastens this valve with its silky threads, so that a resistance is perceived when the fingers are applied to remove it. Probably the spider is in dread of some enemy, which obliges it to have recourse to this ingenious contrivance for defending itself and preserving its young. In the Bermuda Islands there are spiders which spin their webs between trees that stand eight or nine yards asunder. This they do by darting their threads in the air, and the wind carries them from one tree to the other. This web, when finished, is sufficiently strong to entangle a bird. The fact of spiders throwing out a thread in order to facilitate their approach to a neighboring object, is now perfectly well ascertained.

SEED-SOWING.

Most observant persons must have remarked, that in gardening, in all its branches, a few scientific rules rationally observed, are the strongholds of the best cultivators. Let these be understood, and after processes are easy; let them be neglected, and no other advantages will compensate for the loss.

A finely-pulverized soil pressing on all sides of the seed, is found to assist its germination; too much moisture causes it to rot, while a moderate degree of humidity is favorable to a vigorous growth. We shall apply these general remarks to the various departments of seed-sowing, which are interesting to gardeners, both in the flower and the culinary departments.

Never attempt to sow vegetable seeds when the soil is so moist as to stick to your feet. Patience is exercised by delay, but the rule ought to be adhered to, for Peas, Beans, Onions, &c., put into the ground when it does not crumble under the touch of the hoe, cannot do well. The soil cannot be pressed on the seeds except in a hard clayey texture, inimical to growth, and the surrounding land will be rendered hard and impervious to light and air by the treading. The same remark fully applies to Potatoes, for the lighter the soil is, the better the crop will be.

If we follow nature, we shall not sow very deep, for all observation shows that even without any covering, seeds will germinate and prosper. If the ground is in a proper state, seeds should be trodden or rolled in. Last year I took the advice of a writer in the *Chronicle*, and rolled my Onion-bed, when sown, with a heavy garden roller. I think I perceived the advantages of the plan; and the crop was certainly excellent, less disposed to run to neck than ordinarily. After sowing, if the beds or rows are not too extensive, it is better to guard at once against birds and cats, by a slight covering of brushwood. I use pea-sticks, laying them along the rows of Peas and Beans, and upon seed-beds. As soon as the Peas are up, the sticks are on the spot for their destined service.

In reference to annuals and other flower-seeds, the same rules apply. Flower-seeds sown in the open air, should not be put in too early, however inviting the weather may be. In the Middle States, it is inadvisable to sow them till the beginning of May.

RECEIPTS.

We vouch for the following recipe, and recommend it to all mothers travelling with children in hot weather:

Preservation of Milk.—If milk be introduced into bottles, then well corked, put into a pan of cold water, and gradually raised to the boiling point, and after being allowed to cool, be taken out and set away in a cool place, the milk may be preserved perfectly sweet for upwards of half a year. Or it may be evaporated to dryness by a gentle heat and constant stirring. A dry mass will thus be obtained, which, when dissolved in water, is said to possess all the qualities of the best milk. It is called Latteina, in Italy.

For Preserving Eggs.—In March, put half a pound of quick lime in a stone or earthen pot, and add a gallon of cold water: next day, fill the pot with new-laid eggs, tie a paper over it, and put the pot in a cool place. The eggs will be found perfectly fresh at the end of a year.

To make Hens lay Constantly.—Take away the rooster, and supply them (if in winter) with abundance of animal food, taking care to keep the hen-house warm and comfortable.

Preservation of Butter.—One part of loaf sugar, one part of refined saltpetre, two parts of the best pure salt, are to be pulverized together, and kept for use; one ounce of this to be mixed thoroughly with sixteen ounces of the butter, as soon as it is freed from the buttermilk; it is then to be put into a close and perfectly clean dry vessel, from which the air is to be carefully excluded, and it will remain good for many months.

To make Shoes Water-proof.—Take beeswax, tallow or mutton suet, equal parts, rosin, a tenth part of the whole, melt and mix together; apply hot to your husband's shoes, and they will last twice as long, and he will never complain of wet feet; the leather will absorb a quantity of the mixture, and it must be applied *hot*, until the shoes are thoroughly saturated, both soles and uppers.

Asparagus.—Manure heavily in the fall, and in March make the surface of the beds quite white with salt; your shoots will be double the usual size, and your beds free from weeds. The Asparagus grows abundant on the shores of the Chesapeake Bay, where it is almost daily flooded with salt water.

The only Certain Mode of Poisoning Rats.—Make a rich sweet dough, with flour, mashed potato, sugar, and fresh *unsalted* butter; work this into pills as large as a marrowfat pea, strew them in a closet or room inaccessible to children, domestic animals, poultry, &c., for four or five nights in succession, until you find that the rats get into the habit of eating them; then omit the potato and substitute finely pulverized arsenic, and we will answer for every rat on the premises getting his quietus. The rat is naturally so suspicious, that any of the usual modes of poisoning are very inefficient. You must first acquire their confidence, and then betray. As the effect of the poison is to make them exceedingly thirsty, it is best to choose a dry time for laying it, and remove all water from the premises; the rats will then make for the nearest stream, and die before they can return to their haunts. Apropos of rats, and their great sagacity in avoiding baits and traps, Dr. G. B. S., of Baltimore, relates the following: it seems, that being very much annoyed by the rats that infested his house, he succeeded, after considerable difficulty, in destroying them all save one, but this was the very Ulysses of the tribe, and he and the doctor had a trial of wits for a long time, but the doctor was too much for him at last; he discovered that his long-tailed enemy had a weakness, and, like a skilful general, he took advantage of it. His ratship, fearing poison, would eat nothing left in the kitchen, but the ends of the candles left in the candlestick; the doctor sprinkled some arsenic around the wick of his candle, and triumphed.

To make Good Vinegar.—Take ten gallons of apple juice fresh from the press, and suffer it to ferment fully, which may be in about two weeks, or sooner if the weather is warm; then add eight gallons like juice, new, for producing a second fermentation; in two weeks more add another like new quantity, for producing a third fermentation. This third fermentation is material. Now stop the bunghole with an empty bottle, with the neck downward, and expose it to the sun for some time. When the vinegar is come, draw off one-half into a vinegar cask, and set it in a cool place above ground, for use when clear. With the other half in the first cask, proceed to make more vinegar in the same way. Thus one cask is to make in, the other to use from. When making the vinegar, let there be a moderate degree of heat, and free access of external air.